

64484




Class _____ No _____

Presented by

C. H. Frazier, M.D.

#1.85





Digitized by the Internet Archive
in 2014

ST. LOUIS

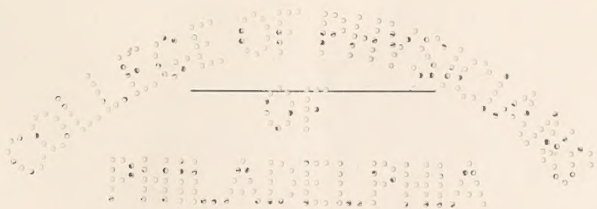
COURIER OF MEDICINE

C. R. DUDLEY, M.D., Editor,

ASSOCIATE EDITORS

WILLARD BARTLETT, M.D.	W. A. SHOEMAKER, M.D.
M. A. BLISS, M.D.	E. S. SMITH, M.D.
E. C. BURNETT, M.D.	A. E. TAUSSIG, M.D.
JOSEPH GRINDON, M.D.	JOHN ZAHORSKY, M.D.

VOLUME XXII.==JANUARY=JUNE, 1900.



ST. LOUIS, MO.:
COURIER OF MEDICINE CO.,
1900.

MAR 10 1904

CONTRIBUTORS TO VOL. XXII.

January==June, 1900.

BARKER, WM. SHIRMER, St. Louis, Mo.	437
BAUDUY, J. K., St. Louis, Mo.	241
BEHRENS, LEWIS H., St. Louis, Mo.	428
BRYANT, JOSEPH D., New York City.	81
CAMPBELL, GIVEN, St. Louis, Mo.	343
CARSON, N. B., St. Louis, Mo.	25
CROTHERS, T. D., Hartford, Conn.	439
DANFORTH, I. N., Chicago, Ill.	418
DUDLEY, E. C., Chicago, Ill.	262
DYER, ISADORE, New Orleans, La.	191, 331
FISCH, C., St. Louis, Mo.	90
GIBNEY, VIRGIL P., New York City.	321
GRADWOHL, R. B. H., St. Louis, Mo.	269
GRANDIN, EGBERT H., New York City.	161
HINCHEY, FRANK, St. Louis, Mo.	176
JENNINGS, J. ELLIS, St. Louis, Mo.	22
LOEB, H. W., St. Louis, Mo.	32
MOLZ, CHAS. O., Bedford, Ind.	350
NEWMAN, L. E., St. Louis, Mo.	166
OLCOTT, A. W., Tucson, Arizona.	103
ORTH, CARL, St. Louis, Mo.	21
OUTTEN, W. B., St. Louis, Mo.	358
PETERSON, REUBEN, Chicago, Ill.	338
RICHELOT, L. GUSTAVE, Paris, France.	4, 112, 181
ROBINSON, BEVERLEY, New York City.	1
SUMMA, HENRY H., St. Louis, Mo.	434
THOMAS, C. P., Spokane, Wash.	171
VON DER HOEVEN, P. C. T., Amsterdam, Holland.	254
WRIGHT, EDWARD R., Brooklyn, N. Y.	16
ZAHORSKY, JOHN, St. Louis, Mo.	401

ST. LOUIS
COURIER OF MEDICINE.

VOL. XXII.

JANUARY, 1900.

No. 1.

ORIGINAL CONTRIBUTIONS.

Sanatoria for Consumptives.

By BEVERLEY ROBINSON, M.D.,

NEW YORK CITY.

NO PROBLEM before the medical profession, to-day, is of greater interest than that of the proper disposal of our consumptive patients. There are many reasons for this. First, and above all, is the undeniable fact that consumption, or phthisis pulmonalis, is the direct cause of death of a larger proportion of the human race in almost all countries and climates, as compared with acute contagious or infectious diseases, like small-pox, scarlatina, measles, typhoid fever, diphtheria, etc.—it destroys far more human beings than all these in their aggregate.

Again, it is a disease which incapacitates those affected for a much longer period, with respect to their ability of self-support. It becomes, therefore, a constant menace to the health of those who are inevitably brought into contact with persons who are thus attacked. Besides, it is well known that by judicious preventive measures the danger of individuals affected with tuberculosis to the well may be greatly diminished. It is only right, therefore, that proper government of the diseased patients should be instituted so as to protect the

community in which they live. This becomes a more evident obligation as it is also recognized we are thus directly useful to those who are diseased.

It has been appreciated for a long while by well-informed medical men that there was a contagious element in phthisical patients. In what this existed precisely, was not known, until Koch made known his famous discovery of the bacillus tuberculosis. In it he recognizes the direct, primary cause of the transmission of the disease. Koch's judgment in this matter has been widely disseminated and almost universally accepted. Like all great truths, however, there are facts which controvert its too absolute acceptance, and even admitting its immense value and possible literal truth, we must still recognize modifying conditions which limit its universal acceptance, unless we emphasize these in very strong terms. Admitting that without the bacillus there is no tuberculosis, yet, even with the bacillus we must have the soil ready or prepared for its growth, development and all the evil consequences of its presence. In a healthy individual it is more than probable that the bacillus tuberculosis will be innocuous; it meets here with a barren soil, takes no root, breeds no disease. Susceptibility, hereditary or acquired, must exist, or the attack of the microbe remains without effect—literally, does little or no harm to the well.

Now, what should be our preventive measures—To carry out those which protect the few, the very few, by *isolation* and separation from their fellows? Or rather the much broader, more humane standpoint, institute such regulations as will benefit the race and cure the consumptives themselves as far as can reasonably be done?

Take the poor in our large cities and towns; are they not the ones most frequently affected, and for whose welfare we should be most concerned, since they are in much larger number? Let our legislatures, then, see to it that in the tenements the air supply is sufficient and good, let sunlight penetrate dark, ill-smelling rooms, let cleanliness be obligatory. Enforce proper over-sight of food and water supply, and soon, very soon, tuberculosis will diminish very greatly.

Of course, tuberculous patients should not be permitted

to expectorate on floors or carpets, either in their homes or in places of public resort; but neither should healthy people be permitted to indulge in an unseemly, barbarous habit of that sort. It is opposed to decency, it shocks the senses of all refined persons—that is enough. Let it be interdicted on this ground, but not because contagion may be rife in every sputum that becomes dried and wafted in the air. It seems to me that the former idea makes an appeal to every one who desires progress in refinement and civilization; the latter idea merely raises questions and antagonisms, and why? Because when thoroughly sifted the proof is often lacking to make it absolutely demonstrable.

Now, then, should we build sanatoria throughout our land, equip them with every modern improvement, make a large outlay of private or public funds, only after a shorter or longer period of rest, nursing, medical care, to send back these same persons either cured, improved, stationary or worse, to conditions and surroundings which are the source and origin, in my judgment, far more of the widespread pest of humanity than the *microbe* whose inoffensiveness is demonstrable when the causes which breed it and make it important, cease to exist?

The microbic theory of disease is very well as a working basis for our sanitary corps, for our practitioners and even our surgeons, because everywhere it is recognized it makes *purity* through *cleanliness*. But when we lose sight of other great and important facts of medicine—old, and older than our civilization, it dwarfs the intelligence and leads to sad departures from common sense and logical deductions.

Let our laboratories do their work, let the microscope show us all it can, let chemical research go hand in hand with bacteriological culture; but never allow the practitioner with broad mind and lofty aims seek the lower level, which may belong to others, but which never can and never will be his due birthright.

The Relative Value of Antisepsis and of Improvement in Technique, as Regards the Actual Results in Operative Gynecology.

By L. GUSTAVE RICHELOT, M D.,

PARIS, FRANCE.

Presented at the Third International Congress of Gynecology, at Amsterdam, Holland, August 8-12, 1899.

THE subject of my discourse is to me a most interesting one, and one on which it gives me pleasure to dwell, in your presence. To treat the matter in all its aspects one would have to review almost the whole of gynecology, but such a task were beyond me, and, indeed, I shall be better pleased to come as quickly as possible to the question at hand, touching only upon such matters as are indispensable if we wish to thoroughly understand it. You are surgeons of knowledge and experience, it is then unnecessary for me to describe antiseptic procedures or to weary you with details of the different mechanical devices.

I must keep myself well within bounds in seeking, not so much to take an inventory of the varied resources which modern research has placed at our disposal, but rather to give you some idea of the spirit in which we are to make use of them. This I do affirm at the outset: The power for good, of practical gynecology, is by no means contained in laboratory formulæ. Though our asepsis may constitute the weapon, by the use of which we win the battle, still it is not alone by carefully watching the hands nor by making use of an ingenious instrument that we came away victorious. The true surgeon plays a finer part, his rôle is a more delicate one, his judgment and his skill of higher use—all of this I propose to show you.

The comparative study in question demands that we examine the results of our operations. Under the first heading let us place *antisepsis*, the rôle which it plays and the limits of its sphere of usefulness. Under the second heading let us

place the *technique*, its modifications during recent years, its especially important phases, and how necessary it is for one to really be a surgeon in order to do the best surgery.

After this has been done it becomes our next duty to study closely therapeutic results in a number of cases operated upon at a period sufficiently remote, it being presupposed that antiseptics and proper technique have played their parts in shaping the history of each. After having demonstrated their relative value in this manner, we shall conclude by placing an estimate upon their joint use, which has already shown us the limits of conservative gynecology (which can not be termed inactive) and we shall not stop without attesting our appreciation of the new era of progress upon which the employment of this combination enables us to enter.

OPERATIVE RESULTS.

(a) *Evolution of Antisepsis*.—With the introduction of Lister's method, and before other progress, antisepsis had its beginning and a revolution was accomplished. Antisepsis is the condition, *sine qua non*, of perfection in the technique; without it one remains stationary, with it he advances. It is to-day the indispensable foundation upon which the whole structure of modern gynecology is erected. But antisepsis is not all in all, it has all along had many short-comings, it has still its imperfections. At first the air was our chief enemy, it was thought that germs from the air alone entered our wounds, all sorts of microbes commenced to play the rôle of pathological ferments. Carbolic acid was the antiseptic chosen by Lister; it was poured upon the floors, the hands were washed in it, and it was thrown upon the wound surface in a spray. The entire idea was to use a powerful antiseptic, or at least one so considered.

Timidly, and little by little, this first period underwent a certain empirical qualification, and in that there was some justification in spite of the conscionable and excellent spirit in the entire work of Lister. But do not forget from that moment the results of our operations were so completely transformed that every audacity become permissible and every hope legitimate.

There is to follow, however, a more profound investigation of the conditions involved in septic wounds, of multiple sources of infection, of the different agents at command for antagonizing them. Air does not inspire the same dread any longer, the spray is now neglected because it furnishes a doubtful security. At the present day one questions only the dressings, the instruments and the hands. The morphology of the various microbes, their different kinds and the degree of virulence of each, compose the investigations of this period. And a narrow task it is, hardly medical, and one in which the living organism resembles a neutral soil, indifferent to when or how the war against infection is waged, and without, so to speak, taking any part in it. Men have experimented with a great number of chemical agents in regard to their germicidal properties, they are classed according to the number of germs which they destroy in a given time, experience, *in vitro*, satisfies the investigators as to the reliability of their work, until now they are warranted in proclaiming that carbolic acid is no longer of extreme value, and, further, that iodoform never did deserve much respect.

This is the period of scientific credulity. We make use of the simplest methods and are seeking constantly in the laboratory to find the perfect germicide and to carry it to the bed of our patient. In the search for a flawless antiseptic one forgets the vital conditions which tend to exaggerate, and with the fixed idea of slaying every germ searches all the corners where they sleep so inoffensive, far removed from the field of operation. Some surgeons even take a bath in bichloride before entering the hospital wards.

There have been during this period those who did not adhere quite so closely to doctrine, and who did not consider it necessary to go to such extremes; those who thought that antiseptics appertained only to the hands of the surgeon, his instruments and the field of operation. They considered it proper to surround themselves with naked walls and with furniture of metal and of glass, in order that the utmost cleanliness might be rendered easy and infringement of the elementary rules of antiseptics made more unlikely. They believed that an operating room should be constructed simply and at

little cost, that it is absurd when operating in a private house to turn pictures toward the wall and carry away statues; further, they considered that in the desire to be "scientific" one might easily become ridiculous.

Those who held such opinions knew very well that bichloride, in spite of its germicidal properties, was powerless against certain forms of suppuration, they knew as well that iodoform, in spite of its accredited lack of power, was, in certain conditions, a most precious antiseptic, because capable of remaining a week or more in a vaginal wound without permitting the generation of an odor, suppuration or fever, while a tampon of salol—a superior antiseptic *in vitro*—became putrid in the space of two days. So they came very sensibly to believe that laboratory rules do not invariably work out in practice. But that is not all.

In spite of many precautions, there would occur in the midst of a series of successes a few misfortunes, and, too, in a simple case, where no accident had been foreseen. Infection appeared to defy the power of antiseptics used in profusion. On the other hand, serious accidents could be attributed many times to the antiseptics themselves. And so it commenced to dawn upon us more clearly, little by little, that antiseptics were insufficient; then, what is more, something old commenced to impress itself upon our understanding, viz., that the antiseptics are in themselves dangerous.

Antiseptics are insufficient, as bacteriology has demonstrated for the best of them. Bichloride itself does not keep cultures of bacteria from producing colonies, and, if on account of close and continued association, it does manage to kill the adult microbes, it is wholly without influence upon their spores. Thus the protection is incomplete and a fissure can at any time occur, through which may pass to our great detriment the germs of an infection primary or secondary.

Furthermore the action of disinfectants in the foyer of infection is too superficial, they illy penetrate the tissues surcharged with microbes and their spores. Witness how our injections attain with difficulty the depths of a fistulous tract left to open outwardly from the abdominal cavity, and how many of these fistulæ persist in spite of us.

Antiseptics are dangerous. And I do not desire to speak merely of the fatal accidents noted at the time when the surgeons were guilty of veritable orgies in the use of carbolic acid, when black urine was a common matter, and when iodoform was poured in profusion upon the wounds. Such accidents can be avoided by exercising precautions of the most elementary sort, viz., by making use of moderate doses. I, for my part, have never had such an experience, but I presume that iodoform intoxication has more than once served as an excuse for a surgeon to whom the admission of an incomplete asepsis appeared something too terrible. But there is also the danger of local nutritive disturbance, in which the antiseptic is, by reason of its chemical action, responsible. It retards the healing of wounds, it renders slower the process of cell multiplication and karyokinesis, the molecular necrosis which is induced weakens phagocytosis and prepares a foyer for infection. Is it a matter of no consequence for our solutions to come in contact with the cellular elements of the peritoneum? They are injured by a saline solution itself, indeed, as yet, no minute research has taught us the degree of concentration in which we can use it without detriment to these sensitive structural elements.

So the use of antiseptics is attended with actual danger and inconvenience, so we can not escape their destructive action without at the same time diminishing their protective power. As a result of this relative discredit into which chemical antiseptics, little by little fell, sterilization by heat gradually gained correspondingly in popular favor.

The use of heat in destroying microbes had its origin in France, in Pasteur's laboratory, for the sterilization of instruments and dressings, so that by bringing into contact with our patients nothing but absolutely aseptic objects we managed in our results to approach perfection. It substitutes, as Terrier says, a mathematical certainty for a calculation of probabilities.

Microbes and spores are destroyed at one stroke, not by boiling at a temperature of $100^{\circ}\text{C}.$, but by boiling at a higher temperature in a solution of carbonate of soda; by exposure to dry steam under pressure and at a temperature of 120, 130

or 150°C. All objects not effected by such treatment should be subjected to it, as all things thus sterilized offer to the surgeon absolute security. Here three questions present themselves:

1. Is the use of heat the consummation of our progress in the struggle against infection? The response is no uncertain one—I do not insist upon anything further.

2. Is it a new method? Yes, says the surgeon, who calls it “the antiseptic method,” and says that asepsis has taken the place of antisepsis. But that is, I may say, in passing, an abuse of language. Asepsis is our object, antisepsis but our means. The “means” can not be aseptic, the two words do not fit together. One should say in speaking of this matter, that heat has as far as possible been substituted for solutions and powders, that heat itself is nothing but the most powerful of the antiseptic means at command. I continue to make use of the term “antiseptic method” because in the introduction of heat there has been no change in the method, it has simply been continued and perfected.

Then this wonderful procedure, in spite of its popularity, and of our desire to use only it, has been but added to the others and can not positively cause them to be forgotten. We can not place our patients and our hands into a steam sterilizer, furthermore, high temperatures dull blades and points. We are then, little as we may desire it, compelled to make use of the chemical antiseptics for the preparation of our hands, the field of operation, and certain other objects. We boil our silk in a bichloride solution, while catgut treated with ether and formalin is as nearly perfect as can be desired.

Sterilization by heat alone can not be employed even in case of patients who are not infected, where nothing more than removal of a simple ovarian cyst is contemplated. But are there not many infected individuals for whom we have need of multiple resources? Have not the chemical antiseptics a positive indication here? These indications are encountered everywhere in general surgery; but think of the phlegmons, anthrax, osteomyelitis, etc., and we see as well within our domain of gynecology that it is not enough to protect the patient against enemies from without, but when we have

to combat an infection which is already in possession of the field, we commence the struggle, of course, with discretion and prudence, and do not recklessly scatter the septic agents, nor do we retard healing by too frequent applications, nor with too prolonged injections. But let us, if possible, be without prejudice or bias, let us make no mistake in regard to the relative value of antiseptics carefully employed, in the hope of attaining good results, even though they do not render aseptic a suppurating focus which happens to be open. Do not scorn one used to better a compromising situation by attenuating a virulent process in a dangerous wound on the surface, or by causing the temperature to fall tomorrow or the day after. Those surgeons who expect to make use of nothing but asepsis in the treatment of infected patients, certainly deceive themselves and undertake a task, the means of whose accomplishment is utterly unclear to them.

In résumé, it is in the combination of chemical antiseptics and of heat that we possess the highest possible security. Sterilization by heat has enriched antiseptic methods by one procedure of absolute value, and one which permits us to realize perfect asepsis at all the points where heat can be brought to bear, without danger to the objects in question.

3. Is the use of heat a simplification of previously existing conditions? No, to be sure, and can not be done cheaply. Sterilization is accomplished by the use of apparatus of precise construction, and difficult to make, costing a great deal, and hard to manage. Indeed, heat sterilization is a luxury, novel in kind, and one for which manufacturer and inventor must be recompensed. To the elaborate furnishings of the wards has succeeded the installation of expensive machinery, in which I can not help seeing something of extravagance. It is true that one can, if really necessary, content himself with a steam bath for instruments, dressings, etc., and another sterilizer for compresses, sponges and the like. He can get along with Chamberland's apparatus (if cleaned often enough) for filtering water, which later must be subjected to boiling for one hour.

It is true that one can boil his instruments in water to which sodium carbonate has been added, and boil his com-

presses, etc., in an ordinary wash-boiler. But it is absolutely necessary that all of this be carefully controlled, in order that the objects to be sterilized be not exposed to new contamination, when the surgeon operates having near him only a little salt solution, or weak sublimate. In fact, every step in the operation must be so timed as if it were one of the integrals of a mathematical calculation.

The above is said for the benefit of surgeons who have a tendency to confound asepsis with ordinary cleanliness, those who are guilty of negligence and absence of the rigorous preparations so needful. This mistake has been made and can be again. We must, then, make a stern effort not to take a retrograde course in our methods, nor be too much influenced by any reaction in favor of imperfect procedure, but rather to learn new means, more rigorous and sure; rather make a fresh effort in the struggle against our enemy—infection.

The surgeons who have entered upon this course have bettered their results. Certain ones seem not to despair of attaining perfection, because they add every day to former precautions a new one; bathing, washing and shaving their patients for a week, putting on sterile gloves and using aseptic masks. They say, with all truth, that the surgical operation should be the first act of the day's work; they refrain from touching an infected case on the eve or day of an operation; they have separate wards for septic and aseptic cases. Be one of those who use gloves, or of those who brush the hands furiously and immerse them in several vessels in succession, as does Terrier; those who wash them least desire nothing but soap and a little artificial serum. But in spite of certain divergences and some subtilities, this constant effort against sepsis has been productive of marvelous success.

In a patient not infected in advance, have we, following an operation well done, the least anxiety? From time to time, a suture causes a stitch abscess, because the fingers touched it at the end of the operation, and because their surgical cleanliness was not maintained till then; just this is the most important subject which the society of surgeons has found for discussion at its recent conferences on the antiseptic method.

That is to say the operative procedure is about to become,

as Terrier would say, "the resolution of a veritable equation, the greater number of whose terms are already well known to us." That were almost ideal, and it is right here that the boundaries, are to me, clearly defined, which we, in the antiseptic practices, dare not overstep.

We are, in duty bound, not to carry infection to our patients, but to take hold of them with clean hands, on which there are neither bacteria or toxins of any sort. But be as clean as we may, personal asepsis has no power to kill the germs which affect others, and we oppose a superior force when face to face with an infection already in existence. For example, in a case of double purulent salpyngitis complicated with intrapelvic adhesions, we think it correct to operate by the suprapubic route. Some do this as a matter of routine, others through timidity, not knowing the manner of performing vaginal hysterectomy, others for good and sufficient reasons—it may be on account of the patient's age, or because of uncertainty as to the lesion being a bilateral one. Whatever it may be, the abdomen is opened, the adhesions carefully broken, when in an instant, without the possibility of foreseeing or preventing it, a rupture of the tube occurs and the peritoneum is contaminated. If such a state of affairs last but a moment, though the pus be of extreme virulence, the patient may, though the rent be small and the escape quickly checked, be lost; sponge, wash, drain, the inoculation has been made and the patient succumbs. No antiseptic would have power to check the process; lavage of the sac, and a few careful applications in the vicinity are all that can be done, make use of *larga manu* upon the intestines and it will be worse then than useless. We are at the mercy of the infection, everything depends upon the quality of the pus, and we can do nothing.

Beside that sombre picture draw one less frightful, viz., the pus is virulent and the patient in danger; after the operation the field is sponged and flushed, shut off with gauze and carefully drained, during two or three days all remains in doubt, the surgeon watches his charge with anxiety, then the temperature falls, the pulse becomes normal and all goes well. A few who are considered in peril display great powers of resist-

ance and give us no further uneasiness. What is the reason for all this? Perhaps the pus was not so infectious; but, at any rate, the organism affected has made practically its own defense and we have had little to do with the whole matter. The nature of the defence of the organism has taken the place of that incorrect one which obtained in earlier investigations on microbes, their specificity and degree of virulence. Bacteriology itself has recognized the importance of this new idea and explained the mechanics of it in demonstrating phagocytosis.

To-day, laboratory and clinic are wont to accord to the composition of the body, tissues and fluids, the greatest influence upon the evolution of microbes. There is, it is true, nothing more obscure, nothing more difficult of penetration, than the modification of the economy which creates a soil, a predisposition, an opportunity for the development of disease; but no one doubts its existence, nevertheless. Microbes, said Charrin, usually live and multiply upon the skin and mucous coverings of the body, within the channels leading to the outer world, they are, so to say, every moment ready and waiting for the change which creates for them a favorable opportunity. Then, in the normal state, that is to say, in ordinary health, the human organism can be said to resemble a city invested by an army which is ever ready to enter and ravage it if watchfulness be relaxed; a pathological condition may be compared to that after the enemy has made a breach. The human economy is self-protecting in the exercise of its ordinary efforts, it repulses every assault and triumphs if it be not weakened and despoiled of its usual means of resistance, otherwise it succumbs.

It is asked, says A. Reverdin, how, within the natural defense of the organism, a surgeon of the old school ever rescued a surgical patient.

One trembles to think of the situation in which we should find ourselves if the tissues into which the knife is triumphantly thrust, were really as sensitive as the culture media upon which our colleagues, the bacteriologists operate. Although we may not have an absolutely unlimited confidence in the *vis natura medicatrix*, still the septic agents are, without doubt,

just as fragile as they are virulent, therein lies our salvation. It is just here that the surgeon's art manifests its value, and that the importance of a proper technique become revealed to us. This art has it in its power to begin or complete the rôle of antiseptis, but it choses the better way—protects the peritoneum, spares blood and shortens the length of an operation; it leads to the invention of useful instruments and to the various procedures best suited to the attainment of the object in view.

A few years ago, at a congress, a surgeon was asked his mortality rate in a major gynecological operation. The response was: "I have 3 per cent, like everyone else." That jesting reply would, if true, put an end to all our discussions of operative methods. If every one had 3 per cent, that would mean that antiseptis had made all things equal, and that it made no difference any longer about the technique. But although there are improvements in the modern technique, improvements which have been universally adopted, which have proven of value, and which have conspired in a measure to equalize results, are there not still improvements to be discussed concerning which the world's opinions is still unfixed? Are there not, besides, certain personal differences which it is almost impossible to define—not differences in skill alone—which are often responsible for the results obtained by one surgeon, being quite unlike those of another. Antiseptis is the same the world over, and demands only blind obedience to certain rules, the technique is variable, and decidedly a personal matter. The value of antiseptis is absolute—within one narrow sphere, that of the technique is relative, and without limits; it depends upon the hand which operates, and upon the mind which directs it.

(b) *Evolution of the Technique.*—One early discovery, with marvelous results, namely, anesthesia, has permitted us to do something besides amputations of necessity, and the opening of abscesses. But the suppression of pain did not lessen the waste of blood, and the obligation to operate rapidly still obtained. Gynecology was still a rudimentary science, without assurance and without interest.

A second discovery, by Sédillot, Koeberlé, and Péan,

hemostasis, by pinching the end of the vessel, allowed the operator the possibility of working with less haste, and of following out a prearranged program. Gynecology was created therewith, and although still dangerous, it scored many successes. But the idea which was held concerning irritation and the access of air for explaining shock, always forced the operator to a certain precipitation, and rendered his work somewhat incomplete.

Then came the third discovery, antiseptis. Knowing the causes of infection and how to provide against them, the surgeon became at ease, could analyze details and perfect his operations. So it was then neither anesthesia nor hemostasis, but rather antiseptis which enabled gynecology to get out of the old rut. And now that the desired condition obtains he is free from hinderance, independent and responsible; and whether he be happy or unhappy, depends to a large extent upon himself. And the fact that two equally aseptic surgeons can have very different success can henceforth only be explained by the difference in technique.

But the technique is composed of elements of decidedly different value. Is it worth while to search long for the better of these when there is risk of never finding it? Observe simply this, that all resolves itself here into two things, the instruments and the manner of handling them. I shall then investigate that which concerns modern gynecology. First, the instrumentarium, and, second, the habitude of the surgeon.

[TO BE CONTINUED].

Honors for General Wood.—The President has promoted Gen. Leonard Wood to be major-general of volunteers, and he now outranks, it is said, all the United States officers in Cuba with the exception of General Brooke. Upon the latter's retirement this year General Wood will undoubtedly be appointed governor of the entire Island. General Wood has definitely put aside a medical career, and has cast his lot with the line of the army, and while we can not but regret the loss of such a man to the profession of medicine, it is evident that he has chosen wisely, and has adopted a career in which his administrative talents can best be exercised.

Functional Derangements of Ocular Muscles.

By EDWARD R. WRIGHT, M.D.,

BROOKLYN, N. Y.,

MEMBER KINGS' COUNTY MEDICAL SOCIETY, BROOKLYN; MEMBER ROYAL OPHTHALMIC SOCIETY, GREAT BRITAIN AND IRELAND; OCULIST TO THE CENTRAL HOSPITAL, BROOKLYN.

THE family physician is often at a loss to know how to advise the members of his own family and his patients in the matter of treatment of eyestrain. He knows that oculists of large experience and lucrative practice prescribe the proper lenses, and pay little or no attention to the ocular muscles, while other oculists recount the many successful results obtained by treatment and operations on the extrinsic ocular muscles.

We propose in this article to deal with the salient features of the subject of functional derangement of ocular muscles and to endeavor to treat it in a manner that will simplify rather than mystify. With this aim in view, we will not use the words—esophoria, exophoria, heterophoria, hypokinesis, etc., not because they are not appropriate and applicable, but because their use is confusing to those who are not in constant contact with the subject of ocular muscles. There are different tests for the examination of the eye muscles, each presenting some advantage and verifying the result of the other, but for these we will refer the reader to the later text-books. The object of these tests is to ascertain the mode of action and the strength in action of each individual muscle and of the associated pairs of muscles. We learn if the muscle or pair of muscles are acting normally, overacting or underacting.

This article will not deal with cases of strabismus, paralysis or spastic deviations, but with the true functional derangements of ocular muscles. To shorten the length of the article we will not enumerate the symptoms that arise from derangements of the extrinsic group of ocular muscles, but use the general term, eyestrain.

The fundamental principle is the government of the two

ciliary muscles, *i. e.* the proper control of the focussing power, or accommodation. We must properly regulate the action of the two ciliary muscles in order to maintain a good relationship among the other muscles, because the same relationship exists between the ciliary muscles and the other muscles as exists between the key-note and the other notes of a musical composition. How essential, then, that we secure the proper lenses as the key-note influence on the extrinsic ocular muscles.

While it is not necessary, in all cases, where glasses are needed, to use a mydriatic, it is imperative to use atropia in the cases where the eyestrain is due to derangement of ocular muscles. The glasses secured by this method are the only true and exact ones.

When the patient has worn the properly-selected lenses for a month or more, we find in the great majority of cases that the eyestrain symptoms have disappeared, and that there is a good working balance among all the ocular muscles. In other words, the correctly chosen lenses have brought about a complete restoration, and, therefore, *no treatment* and *no operation* is proper before the use of atropine.

Suppose a graduated tenotomy had been performed at the time the glasses were selected, the good results would most probably have been attributed to the operation. The partial or graduated tenotomy would have done no decided harm except a few days of lameness to the muscle. You are aware that a partial tenotomy can be performed on any of the recti muscles and effect no change in the strength or action of the muscle nicked. Just as a proportionate number of fibres of any muscle could be severed and have it heal in due time without loss of power. Therefore, submit to no operation until the correct lenses have had full time to adjust themselves to the eye, and their influence exerted for some time on the ocular group of muscles.

When we observe that the two recti interni are the only muscles of the group that have a parallel course from origin to insertion, and that they are the largest muscles of the group, we recognize that they are the most important of the extrinsic muscles, and that the others have a secondary or auxiliary

influence. A moment's thought impresses the truth that the eyes of readers and writers, especially of city dwellers, must converge the two eyes most of the time on near objects, and you at once infer that it is necessary to have the two recti interni muscles of good strength and usefulness.

When it is recalled that the converging power of the two recti interni muscles have a separate nerve center, you realize that the convergence must be an important function of the ocular group. It is very important, then, that these two muscles, of all others, be controlled by perfect coördination.

In cases presenting eyestrain symptoms we often find that it is truer to say that the muscles are not acting properly than to state that they are too weak or insufficient. Their overaction or underaction is due rather to improper coördination than to structural weakness or strength of the muscles. In other words, the muscles have frequently formed bad habits, just as writers, piano-players, etc., with the muscles of the hand. It is an excellent plan to give these ocular muscles the proper training or teaching.

TRAINING LESSON.

With a prism of 10° , base out over one eye, walk up to a candle flame, 20 feet distant, and then return. Do this twice at each practice, but repeat the practice many times a day. In two or three weeks, re-testing of the muscles will show a decided improvement in the action of the recti interni muscles. The glasses are worn at the time of training.

By this training method we handicap the converging power by a prism of 10° , and cause the accommodating muscles to focus the candle flame at every point from 20 feet to the light. The converging muscles in their effort to see one flame are stimulated to action, and thus the converging center—the center governing accommodation or focusing, are brought to work in harmony, *i. e.*, we train the two ciliary muscles and the two recti interni muscles to act in unison. At the same time the other muscles are trained to act, in order that the eyes may only see one candle flame, and thus their action and influences are improved. By this method we often help the beneficent

influence of the glasses upon the ocular group of muscles and thus hasten the return to a state free from eyestrain.

PRISM WEARING.

When a muscle or a pair of muscles show a decided underaction, and the perfect lenses and the prism training do not bring about a better action, a prism base can be worn over the weak muscle. It is ground with the perfect lenses. It is not advisable to wear these prisms permanently, but only as a temporary rest to the muscle.

During the time that the perfect lenses are being worn and the prism training is being followed out, the general constitutional condition should not be forgotten. Syphilis, rheumatism, and hysteria will require special remedies, while attention to local conditions, as adenoids, that bear directly or reflexively on the muscles of the eyeball. When the muscles are weak, strychnine is sometimes beneficial, and hyoscyamus exerts a good influence when the muscles act spasmodically or irregularly.

In the vast majority of eyestrain cases with a derangement of the ocular muscles, treatment according to the previous plans will bring about harmony in the ocular group and cause a disappearance of all the symptoms indicative of eyestrain.

There are a few cases, never more than 3 in 100, that are not so relieved; then we must resort to an operation—tenotomy. A tenotomy is necessary if the preceding methods have been faithfully carried out for a proper time, and the muscle tests carefully made and repeatedly show a want of harmony in the muscle action. The general rule is to tenotomize an overacting muscle and to advance an underacting muscle.

The most common condition is to find the recti interni underacting and the recti externi muscle overacting. This condition is the one that gives most complaint in all near duties, as writing, reading, sewing, etc. By a full tenotomy we set the attachment of the recti externi a few mm. backward on the eyeglobe and thus permit the eyeball to rotate inward a few degrees; this lessens the duties of the recti interni and favors a position most suited to the duties of an active city

life with its attendant strain of the eyes on near and small objects.

By tenotomy, we mean a severance of the muscle from its attachment to the sclerotic; we do not mean a tenotomy that is called a graduated or partial tenotomy, or familiarly known as button holing the muscle. In partial tenotomy a few fibers of the muscle are severed from the sclerotic. Our knowledge of general surgery at once prompts us to say that this button-hole will in a short time be filled with scar tissue. Our knowledge of the anatomy of the ocular muscles recalls the fact that the muscles rest on the globe from their attachment to the equator of the eyeball, and that, therefore, a reunion of the cut fibers will form at their old attachment and the muscles will be unchanged in point of application of its force and unchanged in mode of action. At best, this operation only gives the muscle a few days' rest. Therefore, it is unfair to perform partial tenotomies, and it is unkind to button-hole or nibble in this manner the tissue of these muscles.

In strabismus operations we sever the muscle from its attachment and also separate the capsule of Tenon from the globe for a considerable area about the muscle insertion and always well forward to the cornea. In tenotomies for functional derangements of the ocular muscles we sever the muscle with small, sharp-pointed scissors, using a small hook, and pay particular attention to separate the capsule as little as possible from the sclerotic. Immediately after the operation the eye can be moved by the tenotomized muscle because the muscle is still adherent to the capsule of Tenon. In a few days the muscle has formed its new attachment and these work in unison with the other muscles. Tenotomies that are done on these principles give most gratifying results.

In conclusion, it will be observed that these are the recognized principles in the treatment of strabismus: First, the proper selection of the glasses with the eyes under the influence of atropine; second, the training of the muscles governing accommodation, convergence and other movements; third, if the desired results are not yet secured, then a tenotomy. In strabismns, severance of muscle attachment and free separation of the surrounding capsule from the eyeball; in func-

tional derangement of the ocular muscles, severance of the muscle attachment and a minimum separation of the capsule of Tenon from the globe.

It is true that each case must be carefully studied from all sides and a tenotomy or advancement must be performed when good, valid reasons can be assigned.

Typhoid Fever Complicated with Chorea and Diabetes Insipidus.

By CARL ORTH, M.D.,

ST LOUIS, MO.

TO ADD to the literature of typhoid fever I will mention a case of this disease complicated with chorea and diabetes insipidus which occurred during our recent epidemic in this city. This is a very rare complication. As the true nature and etiology of chorea and diabetes insipidus is at present unknown, my observations may, perhaps, be the stimulus to some medical investigator to ascertain if certain microbes or their toxins do not play an important rôle in the etiology of the so-called idiopathic cases of both diseases.

Mrs. R., 24 years of age, previously had always been in good health, without any hereditary neuropathic tendencies, had an attack of typhoid fever November 2, 1899. I put her under the ordinary hydropathic treatment, milk diet and, occasionally, small doses of dilute muriatic acid. The disease ran its normal course for the first two weeks; constipation being the rule. Maximum temperature, 104.5°; highest pulse rate, 120. About the third week the patient complained of a paresis of the left lower limb, which, however, disappeared in a few days. Then semichorea set in, affecting the left arm and hand. Involuntary and irripresible movements of the arm and contractions of the hand kept up for several days, annoying the patient considerably; it finally disappeared, and the patient commenced to pass very frequently and in very large quantities (about two gallons every 24 hours) a clear and very pale urine, and she developed an abnormally great thirst. No renal or cardiac disease was present.

The urine was examined and found to be of very low specific gravity ---1004, neutral reaction, free of albumin and sugar. The temperature remained more or less stationary, with very little mental disturbance. About one week later a slight cystitis developed which protracted the disease somewhat, but finally the patient made a perfect recovery. No medicine other than the above stated was given.

Hydrotherapy, milk diet and good ventilation of the sick-room, I consider, the ideal treatment of typhoid fever. Antipyretics, internally antiseptics and alcoholic stimulants are of very little value; the same is the case with numerous artificial food preparations, which do more harm than good, in spite of the glorious testimonials of so-called prominent professional men.

Torpor of the Retina Due to Exposure in the Klondike.

By J. ELLIS JENNINGS, M.D.,

ST. LOUIS, MO.

Read before the St. Louis Medical Society, January 6, 1900.

ON October 21, 1899, E. R., 55 years of age, sought my advice on account of failing vision. The patient is a tall, well-built man and has always enjoyed good health. No specific history. He is a gold miner, and for the past thirty-seven years has led a roving life. Two years ago he headed an expedition which explored the head waters of the Copper River in Alaska. They were out nineteen months on the trip, the temperature often being 50 to 60°F. below zero, and of course suffering all kinds of hardships. The most annoying of their experiences were frequent attacks of snow-blindness. This affection is characterized by a burning feeling in the eyes, great pain and redness of the eyeballs, and swelling and stiffness of the lids making them feel as though sticks were under them. The lids are closed spasmodically and can only be opened by prying them apart with the fingers. The

sight is not injured. These symptoms usually disappear during the course of the night. Hot applications give relief, but the best treatment consists in placing the face and eyes in a basin filled with a saturated solution of salt and snow-water. This relieves the heat and tension and after a little time the eyes can be opened in the brine. An ice pack is then bandaged over the eyes after which the sufferer usually goes to sleep. The patient said :

"In December, 1898, after being out about ten months, we were crossing the great divide. The ice was very rough, and as the dogs could not drag the sledges, we were forced to pack our outfit about thirty miles. The dogs carried fifty pounds and the men seventy-five. One afternoon four of us were overtaken by the darkness when about five miles ahead of the main party and were forced to pass the night in an exposed position. It was bitterly cold, about 60°F . below zero, and, exhausted by the hard day's march, we huddled together behind a protecting mass of ice with a deer-skin for a bed and a couple of blankets for a cover. Sleep was impossible and when morning came we were almost frozen. When I arose to look for something to eat I found that my sight was almost gone. This surprised and greatly startled me, as the day before I had done considerable shooting and my sight was perfect. My eyes were not painful nor were there any symptoms of ordinary snow-blindness. The only symptom was the dimness of vision as though all objects were seen through a heavy mist. We had plenty of supplies with us at the time, so that it could not have been due to lack of nourishment. Nor was there any scurvy in the camp. While my sight was dim, I was never troubled with night-blindness; in fact, I experienced considerable relief at nightfall, and could move about as well as the rest of the men."

VISION—At the first examination I found vision in each eye reduced to one-fourth of normal and not improved by any lens. But in making tests from day to day I found that although at first he only could read $\frac{5}{xx}$, yet, after looking fixedly at the type for a moment, the cloud would lift, as he expressed it, and he could read $\frac{5}{vi}$ and even $\frac{5}{i}$. But the next moment vision would again fall to $\frac{5}{xx}$.

RETINOSCOPY UNDER HOMATROPINE.—Shadows reversed by a +2.00 D. lens. There was no astigmatism.

THE OPHTHALMOSCOPIC FINDINGS were the same in both eyes. The disc is a perpendicular oval with a small physiological cup sloping upwards to the temporal edge. The disc is injected, filled in, and presents the pale reddish tinge often observed in cases of tobacco amblyopia. There is a slight haziness at the nasal side of the disc and a ragged look at the temporal side with some stretching of the choroid. The *arteries* and *veins* are normal as to size, course and tortuosity. The *other portions* of the fundus appear healthy, but a close inspection of the macular region reveals fine changes of the retinal elements at the yellow spot, changes so slight, however, as to be easily overlooked.

An examination of the *visual field* showed marked concentric contraction for white as well as colors. But this contraction varied to a marked degree from day to day. There was no central scotoma.

TREATMENT consisted in instillations of atropine, dark glasses, and strychnia sulphate, gr. $\frac{1}{50}$ t. i. d. After several weeks of this treatment vision showed marked improvement, though at times the finer letters were suddenly obscured by a mist. However, this gradually became less marked, so that by December 23rd, when he started back to the Klondike, he was practically cured.

A study of this case is of considerable interest, first, because of its rarity, and, second, because of a certain amount of speculation as to its probable cause. The diagnosis, exhaustion or torpor of the retina was the only one warranted by the symptoms, *i. e.*, almost negative ophthalmoscopic findings with concentric contraction of the visual field for white and colors varying from day to day, and a marked diminution of visual acuity, which suddenly and without apparent reason returned almost to the norm. The etiological factors to be considered are malnutrition, fatigue, and exposure to the glare of snow and ice. A reduction of the general nutrition is responsible for the condition known as hemeralopia or night-blindness. Here the sight is normal all day, but very poor at night. The disease is found among soldiers and sailors, especially

those suffering from scurvy, and among the peasants of Russia who have been weakened by the long fast before Easter. In the present instance, however, our patient was fairly well-nourished and gave no history of night-blindness. In fact, the patient said he saw better in the evening.

In regard to the effect of the constant glare of snow and ice on the sensitive nerve elements of the retina, it is well known that exposure of the eyes to the direct rays of the sun and to intense flashes of electricity, causes temporary and often permanent diminution of vision. But such disturbance is usually in the form of a central scotoma, *i. e.*, a circumscribed area at the fixing point where vision is diminished or lost. The usual effect of the glare in far northerly countries is the acute inflammation of the eyes, already mentioned, and known as snow-blindness, but in such cases the sight remains unimpaired. At the time my patient first noticed the loss of sight, the sun had sunk below the horizon and the long Arctic night had set in. In view of the fact that the disorder appeared after days of fatigue and a night of great exposure, I am inclined to believe that general bodily exhaustion was an important factor in the case.

Report of Results of Eighteen Tests Made for Rendering the Hands Aseptic Before Operation.

By N. B. CARSON, M.D.,

ST. LOUIS, MO.

Read before the St. Louis Medical Society, January 13, 1900.

NOT being satisfied with the different methods employed to sterilize the hands and arms on account of the condition in which these were left after applying these methods, I was ready to try any new process that would promise success, and at the same time not irritate or poison the skin, so when I saw the method employed by Wier, by which

Labarraque's solution (liq. sodii chlorin.) was developed by means of carbonate sodium and chloride calcium in the presence of water, I was ready to try it to determine if its merits were all that was claimed for it.

For the past two years I have used this method continuously with the most satisfactory results. Instead of the hands being rough, harsh, dry, and often inflamed as they generally were after other methods previously employed, they are soft and pleasant. The only fault that can be urged against it is the odor of chlorine left behind, and even this is far to be preferred to the odors left by foul pus, etc.

Last summer, wishing to determine to my satisfaction how far this method was to be relied on to render the hands and arms sterile, I undertook to make a number of cultures, and to note the results of the cases—whether suppuration followed, and how far it was due to infection from the hands or other outside sources. Before giving the results of these observations I will describe the technique employed.

The nails are first trimmed to the quick, care being taken not to injure the skin. The parts around and under the nails are then gone over with a strip of bamboo, such as is used for seating chairs. The outer layer of this is removed and the remaining part cut into suitable lengths, these are then divided into strips. These strips are boiled for a half hour daily for three successive days in a soda solution. It is essential that they should be completely immersed in the solution. They are then preserved in a solution of corrosive sublimate in alcohol 1-500 until the day of operation, when what is required is taken from the alcohol and again boiled in plain water for half an hour. These are then put either in a normal saline solution or plain water in a sterile receptacle from which the pieces are removed with forceps as required.

The hands and arms are scrubbed for ten minutes at least with a sterile brush (care must be taken and some judgment used in this process, as all of the parts to be cleansed are not alike, some being more tender than others, and therefore not able to stand as much or as hard scrubbing) and soft soap. The soap used is the ordinary home-made soft soap, which has this advantage, that it can be sterilized daily by boiling. It

removes all of the fat and softens the epidermis and when carefully made does not injure the skin.

The washing should be done with hot, sterile, running water, no basins being used. Indeed, basins should be absolutely discarded from the surgical wash-room, as also should all but sterilized water. After the hands have been thus cleansed, two or three pieces of carbonate of soda about the size of a partridge egg are taken in the palm of the hand and about one-half the quantity of chloride of lime should be added, and enough water added to thoroughly moisten. It is then rubbed together until a smooth paste is formed. At first it is hard and gritty, and imparts a feeling of warmth, but after rubbing a while it becomes smooth and cream-like, and gives a cool sensation to the parts. Then the soda should be discarded and the paste rubbed thoroughly into the hands and arms, so that all of the crevices and follicles of the skin are filled with it. Another piece of the bamboo is then taken and the nails are gone over so that the paste is made to reach all of the crevices around and under them. Five minutes at least should be devoted to this part of the process.

The chemical changes brought about by this combination are the development of the hypochlorite of sodium, chloride of sodium, excess of carbonate of sodium, and the development of free chlorine gas.

The commercial chloride of lime is said to contain from 25 to 40 per cent. of free chlorine, and in order to be efficient must contain at least 30 per cent. of chlorine. And as it rapidly absorbs moisture and evolves chlorine, it should be used immediately after it is opened, otherwise it will become useless. Now, chlorine gas, as we all know, is one of the most active of germicides, and experiments have shown that it will destroy moist germs in a moist atmosphere in one hour when mixed with the air in the proportion of 1-100 in a closed room.

Doyen's experiments show the hypochlorites also to be most reliable germicides, as under the same conditions they will destroy the germs in two minutes when mixed with the air in the proportion of 1-400, and in six hours will destroy the spores of the anthrax bacillus in 1-10,000.

It is claimed that the excess of sodium carbonate removes

the fats and outer layers of epidermis, and that the hypochlorites and the chlorine gas destroy the bacteria, and by rubbing the paste thoroughly into the crevices and the follicles and glands of the skin, and thus filling them, the free chlorine reaches into their deepest parts and destroys any germs they may contain, thus rendering sterile the deep as well as the superficial parts. Finally, the paste is washed off with running, hot, sterile water.

During the progress of the operation the hands are frequently washed in plain water or normal salt solution. The field of operation is carefully cleansed by the ordinary methods, great care being taken that the skin is not irritated in so doing.

The accompanying tables show the results of 18 cases wherein cultures were made, and were selected without reference to any particular case or class of cases, and while they do not include all of the cases operated on during that time, still they are fair examples of the results obtained.

In the eighteen cases above mentioned, cultures were made from the hands before washing in thirteen, and of these thirteen cultures twelve developed growths, while one remained sterile.

Upon examination the growths showed staphylococcus pyogenes aureus, streptococci, diplococci, bacillus subtilis, hay bacillus, penicillium glaucum, a short thick bacillus, and long thin bacillus without spores.

After washing the hands, in eighteen cases growths developed in seven. In these seven the bacillus subtilis was found three times alone, once with a short thick bacillus. In three others the staphylococcus albus was found, once with the short thick bacillus.

In these three cases I used lime that had been previously opened and was on that account useless. In order that it should be effective the lime must never be opened until required for use, and no attempt made to keep any that may be left over.

In four cases the bacillus subtilis was found, once with another bacillus. These bacilli were found (as you will see by referring to the tables) in the water used in washing the hands,

TABLE SHOWING RESULTS OF EIGHTEEN TESTS MADE FOR RENDERING THE HANDS ASEPTIC BEFORE OPERATION.

NO. AND DATE.	OPERATION.	HANDS BEFORE WASHING.	HANDS AFTER WASHING.	MANNER OF HEALING.	REMARKS.
1—July 2	Appendicial abscess.	Staph. pyog. aureus and bacil. subtilis..	Bacil. subtilis ..	Aseptic.	.....
2—July 9	Resection of infer. max.	Staph. pyog. aureus and bacil. subtilis..	Bacil. subtilis ..	Aseptic.	Test made of bamboo as counter test. Bacillus subtilis.
3—July 12	Bassini operation. Hernia. Rad. cure.	Staph. pyog. aureus and bacil. subtilis..	Bacil. subtilis ..	Suppuration.	Test culture of water. Bacil. subtilis. Bamboocult. culture. Bacil. subtilis. Catgut after suturing. Staphylococcus, staph. aureus, and bacil. subtilis. Catgut drain and sutures removed at first dressing July 17th. Short thick bacil. with rounded ends. Staph. aureus.
4—July 18	Bassini operation.	Staph. aureus and diplococcus.	Bacillus subtilis, and short, thick bacillus with rounded ends..	Antiseptic.	Bamboo counter test. Bacil. subtilis and long thin bacil. staining irregularly. Catgut sutures removed July 20th. Short thick bacillus, rounded ends, no spores.
5—July 21	Appendicial abscess.	Staph. aureus, bacil. subtilis. Short thick bacillus with rounded ends.	Staph. aln. and same bacillus..	Drained.	Bamboo. Long thin bacillus. No spores.
6—July 27	Ununited fracture. Wiring both bones forearm.	Staph. alb. bacil. us. short thick and bacillus subtilis ..	Staph. alb.	Suppuration due to bruising of tissues.	Water counter-test. Bacillus subtilis. Bamboo. No growths. Catgut suture. Staph. alb.
7—July 30	Inguinal colotomy.	Staph. alb.	Staph. alb.	Aseptic.	Catgut suture after using staph. alb.
8.....	Bassini operation. Hernia. Rad. cure.	.....	No growth.	Aseptic. Gloves worn	.....

TABLE CONTINUED.

NO. AND DATE.	OPERATION.	HANDS BEFORE WASHING.	HANDS AFTER WASHING.	MANNER OF HEALING.	REMARKS.
9.....	Resection of hip....	.....	No growth.....	Suppuration....	Suppuration did not develop until late; due to faulty dressing.
10	Laparotomy.....	.....	No growth.....	Aseptic. Gloves worn.....	.....
11—Nov. 21	Osteotomy.....	Penicillium glaucum.	No growth.....	Suppuration....	Remained aseptic for some time after operation. Died of exhaustion.
12—Dec. 2	Bassini operation. Hernia. Rad cure.	No growth.....	No growth.....	Aseptic. Gloves worn.....	.....
13—Dec. 15	Appendicel sinus.	.....	No growth.....	Aseptic. Gloves worn.....	.....
14—Dec. 21	Laparotomy. Dermoid cyst.....	Staph. alb.....	No growth.....	Aseptic. Gloves worn.....	Wound not entirely healed. Still aseptic.
15—Dec; 22	Laparotomy. Old pelvic adhesion..	Hay bacillus.....	No growth.....	Aseptic. Gloves worn.....	Died on fourth day from edema of brain due to Trendelenburg position and chloroform.
16—Dec. 24	Laminectomy.....	.....	No growth.....	Aseptic. Gloves worn.....	.....
17—Dec. 36	Bassini operation..	Penicillium glaucum.	No growth.....	Aseptic. Gloves worn.....	Wipings from gloves. Hay bacilli.
18—Jan. 11	Appendicel abscess.....	Cloudy third day.....	No growth.....	Gloves worn.....	Drained. Wound united to drain. Later skin opened up, due to infection from abscess cavity. Deeper layer held.

and in the sticks of bamboo used in cleaning in and around the nails. I then changed the method of preparing the bamboo, instead of boiling it for a half hour just before the operation, as had been the custom, adopted the method above described. To wash the soda and lime from the hands I now use water specially prepared. After taking these extra precautions, I succeeded in the last eleven experiments, and by referring to the table you will note that the cultures remained sterile.

In thirteen of these cases we had aseptic healing, and in five suppuration. In Case 3, operation of radical cure of hernia (inguinal) the patient had worn an old ill-fitting truss which had bruised the tissues. Also when brought to the table there was a slight dermatitis due to the preparation for operation.

Cultures made from the catgut after suturing developed streptococci, staphylococcus aureus, and bacillus subtilis, showing conclusively that these germs were already present in the tissues and the devitalizing effects of the operation made a bed for their development. (The suture material I know to have been perfectly reliable).

In Case 8, ununited fracture of both bones of forearm, suppuration was due to unavoidable bruising of the tissue. In this case the suture material after having been used developed staphylococcus albus.

In Case 9, resection of hip, and Case 11, osteotomy for osteomyelitis, syphilitic suppuration developed after some time and was due to faulty dressings.

In Case 18, appendicial abscess, the skin united up to the drain, but subsequently opened and suppurated from infection from abscess cavity.

In eight of the cases I wore rubber gloves; all of these except Case 18 remained aseptic. In six of the ten, where gloves were not used, there was aseptic healing. (My first assistant wears rubber gloves, while all of the other assistants wear cotton gloves. The nurse in charge of sponges handles them with sterile forceps).

Case 15 died on the fourth day from edema of the brain due to Trendelenburg position and chloroform. On account of hemorrhage, the patient was in the Trendelenburg position nearly two hours and under anesthetic at least two hours. I

tried to lower the hips, realizing the danger of this position, but had to return to it in order to expedite the work.

After the completion of the seventeenth operation, with a piece of gauze supposedly sterile, I wiped the inside as well as the outside of the gloves and made a culture which developed hay bacillus.

The results of these experiments agree with Kocher's, that the deep as well as the superficial parts of the hands can be rendered aseptic, if proper care is taken in their use, and even if we do not succeed entirely those germs that remain behind are so few and so benumbed by the antiseptics used that unless the vitality of the parts is very materially lowered they will be destroyed in the tissues.

The result of the one observation made by wiping the gloves both inside and out, after the operation, agrees with results obtained by others, that the germs, if present in the deep parts of the skin are not washed out by the perspiration.

Removal of One Hundred and Seven Polypi at One Sitting.

By H. W. LOEB, M.D.,

ST. LOUIS, MO.

Read before the St. Louis Medical Society, January 20, 1900.

IN the latter part of December, 1899, I was asked by Dr. Nietert, Superintendent of the City Hospital, to see a patient upon whom operation for what was supposed to be a sarcoma of the conjunctiva had been performed; at the same time it was found that the man had a large number of polypi in both sides of his nose; he likewise had orbital cellulitis which the attending ophthalmologist thought was continued by the presence of such a mass of polypi in his nose with the coincident ethmoiditis. For this reason there was no time to waste, and since the ophthalmologist in attendance desired early relief, I undertook to remove all the polypi at once.

Consequently on December 27, 1899, I removed with the electro-cautery snare, which I devised, the mass of polypi which I have the pleasure to present to-night. The first count showed that there were 127, but a subsequent count—and, by the way, I had nothing to do with the count—after elimination of some of the particles which were not fully developed polypi, reduced the number to 107. These 107 polypi were all removed at one sitting from this one patient's nose in the presence of numerous members of the City Hospital staff, and they were all taken out with the electro-cautery snare. The total weight of the polypi was 77 grms (about two and a half ounces), and they completely filled a two-ounce bottle; they measured in bulk 60 c.c. According to the first count, there were sixty-eight taken from the left side and fifty-nine from the right.

I brought the specimen here to show that they are not sections of one tumor, and you will note the rounded mass of each growth.

It required three-quarters of an hour to remove them and during that time the patient lost only one ounce of blood. Immediately after the removal of the growths I cut away the anterior end of the left middle turbinated bone and opened up the ethmoidal cells and curetted them.

Another purpose in bringing these specimens here is to show you something that I have never seen before, and so far as the literature at my command is concerned—and it is not inextensive, it is quite a rare thing—the rarest in the literature.

I find that Schaefer, as quoted by Zarniko, has observed sixty polypi in one individual, but there is no statement as to whether he removed the growths or let them remain; the statement simply is that he observed sixty in one individual.

Bresgan has removed forty or fifty from one patient, but it is not stated whether or not they were removed at one sitting, and the presumption is that they were not, because they were removed with a cold snare.

Vacher is reported to have had a case in which the alæ of the nose were separated 7 centimeters and he removed forty-two polypi, but he removed them with a cold snare and cau-

terized the bases; therefore the presumption is that he did not remove them all at one sitting.

Heymann, in the last and most important book on nose and throat diseases that has been written, calls attention to the fact that you can remove from five to ten from one side of the nose, and in rare instances as many as twenty, with the cold snare, after which time the hemorrhage is so profuse that it is impossible to continue the operation; so according to that the extreme number that could be removed at one sitting would be forty—twenty from each side of the nose.

I simply present these growths to call your attention to the ease with which the operation may be done with the electro-cautery snare. Without the electro-cautery snare I could not have relieved this man of that number of polypi at one sitting; with it, it was quite easy to do so. Objections have been urged against the electro-cautery snare on the ground that it is necessary to renew the steel wires so often. I used only four in this particular operation; if I had tried to take away 107 polypi with the cold snare I am sure I should have used forty, they would become so twisted and turned that fully that many would be required.

There was no resulting inflammation following this operation. For several days after the operation the temperature was between 99° and 100° F., but he had no symptoms of any infection from this particular operation notwithstanding the fact that at the same time I opened and curetted the ethmoidal cells.

I have also brought the particular snare which I devised, and any of the gentlemen who wish to do so may see it.

Gifts to the Lying-in Hospital, New York.—Mr. J. Pierpont Morgan, who some time ago gave \$1,000,000 to the Society of the Lying-in Hospital, New York, for the erection of a new hospital building, has added to his donation the sum of \$350,000 and two large lots which will give an increased area for building purposes of about four thousand square feet. The new building will be ready for occupancy in about a year, it is understood.

EDITORIAL.

THE MEDICAL EXPERT WITNESS.

The average medical expert is not a success on the witness stand. In a legal contest in which medical knowledge is required, the law demands evidence in the way of facts; statements of opinion or belief by which terms the progress, duration or extent of the greater proportion of mental or physical ailments have to be expressed, are lacking in sufficient exactness to be acceptable. It is the inability to sufficiently control the course and influence of diseased conditions that renders the physician unable to comply with a legal demand for exactness, or to describe conditions by a definition that is comprehensive or complete, and leaves nothing else to be added. Being thus unable to give the desired information in the terms or manner wished for, able and learned physicians, on the witness stand, are often made to appear to have but a limited knowledge of the conditions in question, or are otherwise humiliated by the attorneys in the case.

Lawyers take advantage of the impossibility to state the outcome of a physical condition with positive exactness, for the purpose of destroying the effect on the jury of the physician's testimony, by causing it to appear absurd since it can not be exact.

Law is exact and constant. Medicine is changing and undergoing a continual process of evolution. Law is built upon precedent; medicine is always reaching toward the unknown, and at each advance tries to make use of all it can reach, and each day sets up new standards for guidance, until the morrow gives something better.

The outcome of the resultant effects of pathological conditions of the mind or body can not be governed by a rule and medical jurisprudence contrary to what seems to be a general opinion—in legal circles—is the science, not of applying legal principles to elucidating medical questions but of applying medical knowledge to the solution of legal problems.

All physicians recognize, for example, that it is impossible to formulate a strictly scientific definition of insanity, that is, a definition which shall embrace every variety of the disease and at the same time exclude certain conditions of mental disturbance or disorders which do not come within our conception of insanity—and yet, in medico-legal cases involving the sanity of an individual one of the first questions to be asked the medical expert witness is, to give a definition of insanity. Generally the degree of exactitude of the information that can be given by the medical expert is expressed by the fact that it is his opinion or belief and not that certain conditions are facts in reality beyond the question of a doubt.

Quoting from Purrington (*N. Y. Medical Record*, December 9, 1899): "Statements of opinion and belief differ from statements of facts only that the first two, which are convertible, indicate the witness' consciously reasoned judgments short of certainty or convictions; whereas the latter are expressions of his certain judgments based upon perception unconscious reasoning or inference." By the very nature of the subject the statements of the scientific witness is largely that of opinion and belief, and the line between opinion evidence and evidence as to fact is as vague and indistinct as that sometimes between sanity and a deranged mental condition.

An expert is only a person specially experienced, skilled or learned in some art or science; or in any department of knowledge or skill wherein the formation of a sound opinion necessitates a previous knowledge and experience beyond the lines followed by the average man. The medical expert in its true meaning has fulfilled all these requirements, and his opinion merits the respect of even the lawyer on the opposing side, and the dignity of his position should accord to him protection from the attempts that are sometimes made to weaken his testimony by erroneous deductions.

The law has its experts as well—the judges, whose opinions, right or wrong, by the very nature of our judicial system none dare question and are binding in force until set aside by a higher tribunal.

But while their opinions are not subjected to the searching tests of cross-examination they often fail to agree upon questions far less difficult than those which confront the medical expert. Purrington

mentions an instance in which the facts were agreed upon and the only question involved was one of law, whether a statute (New York State) forbidding one convicted of felony to practice medicine could apply to a licensed physician, so convicted prior to its enactment; in other words, whether the statute was *ex post facto*. The trial judge decided negatively. The appellate division of this department, by a vote of three to two, reversed him; the court of appeals in turn reversed the appellate division, two of its judges dissenting; and finally the Supreme Court of the United States, after two arguments, affirmed the court of appeals, three of its members dissenting. Thus, it would seem, that while physicians often fail to agree, the legal profession, likewise, have its difficulties in this respect.

The contrast between the medical and the legal expert is striking. To quote Purrington further: "The opinions of the judges who sit high on their thrones of awful state are hedged about and properly and justly so, with that reverence that attaches to authority. But how is it with the medical expert? Divested of all pomp and panoply, they utter their opinions from the same stand with other witnesses, the obvious truth-tellers and the unmistakable liars, and they utter them, too, under the same procedure that is adopted to elicit what is fondly called the facts in the case."

Let the medical expert be appointed by the court, where, uninfluenced by the payment for his services by one or the other side, his opinion will be impartial, and should be final. His position then will be on a level with the judge presiding in the case, and his opinion will be accorded the consideration and respect to which his ability and attainments entitle him.

THE STATE BOARD OF HEALTH AND MEDICAL PRACTICE BILLS.

The reputable medical profession has suffered many things in this State at the hands of our legislators, and through the profession, the public, the interests of the former being in every particular at one with those of the latter. That this State has in this respect fared worse

than many of her sisters, is a well-established fact. Some seventeen years ago a State Board of Health was created, which did excellent work considering the imperfections of the statute under which it operated, and the limited means at its disposal. In spite of the niggardly policy of our legislature in all matters pertaining to public health, it succeeded in saving hundreds of lives and thousands of dollars to the commonwealth. This was only accomplished by the public-spirited self-sacrifice of its members, who in many instances met the necessary expenses of the Board out of their own pockets, the State having failed to make the necessary appropriation. We understand that they were ultimately reimbursed. Among other things it sought to raise the standard of legal competency to practice medicine, by building up a set of regulations for the guidance of medical colleges. These efforts had begun to bear fruit, when, some three years ago, a decision of the State Supreme Court virtually rendered nugatory all the rulings up to that time promulgated by the Board in regard to admission to practice. That medical education has not with us completely lapsed into its ancient slough of inefficiency, is solely due to two causes: First, the existence of a better scientific spirit and higher ideals among the upper class of teaching institutions, which was in some degree reflected upon the lower, albeit, it may be, in despite of themselves; and, second, the maintenance of a high standard in certain adjoining States, notably, Illinois, from which our colleges drew a share of their students, and to the requirements of which they were, in a measure, constrained to conform.

An attempt was made to secure the passage in the last General Assembly of an act regulating the practice of medicine. The bill as originally formulated by State Senator G. H. Wilson, a regular practitioner of this city and one devoted to the best interests of the profession, while not such as to satisfy all of our desires, nor such as Dr. Wilson would have drawn up under a more promising set of circumstances, was probably the best that had any hope of passing under the circumstances such as they were. This bill was in committee "improved" until no longer viable. In other words, the committee drew up an "ideal" bill, which was most praiseworthy as an exposition of what all good men pray for, but which was foredoomed to defeat at

the hands of our honest and intelligent statesmen, which doom was speedily its portion.

In view of these facts, the Missouri State Medical Association appointed at its last meeting a committee of five to draft a medical practice bill, and a bill defining the duties and powers of the State Board of Health. To this committee was added, on motion of Dr. E. L. Priest, of Nevada, Mo., an advisory committee, composed of one or more members from each representative district. The committee, thus enlarged, held its first meeting at Sedalia in August, and completed its labors last month in this city.

We believe that the bills, as now framed, are the best that our State Legislature is willing to enact. True, they leave much to be desired, but it is better to ask for a little, and get it, than to demand much, and be refused. We must reckon with conditions as they are, and not as we would have them be. Experience shows that it is easier to amend what you have, than to obtain all you want at the first. If these bills carry, an attempt will be made at the next session to "mould them nearer to the heart's desire." We will publish these bills in a forthcoming number and bespeak for them the support of the profession. The most practical way of lending that support is by direct appeal from every physician to his representatives at Jefferson City, to lend his vote. If only the physicians of this State were to fearlessly and unitedly demand their dues they could obtain this and much more.

THE PASSING OF DR. SCHENK.

Dr. Leopold Schenk, Professor of Embryology in the Imperial and Royal University, and Director of the Embryological Institute in Vienna, has been reprimanded and retired from his position by the Government of Austria.

Dr. Schenk, in a book written about two years ago, claimed to have discovered a method by which the sex of a human fetus could be controlled at will.

According to his theory, there is an invariable difference in certain final products of metabolism in a woman, pregnant with a male fetus.

and the one in whom the fertilized ovum develops a female embryo. Whenever it is possible to so influence by artificial means the metabolism of a woman that the same characteristic final products of tissue change appear in her urine as those peculiar to pregnancy with a male fetus, and if such a metabolism begins some time before and continues during the differentiation into sex of the embryo, the result is a male child. By a suitable diet, he claimed to be able to so modify the nutrition of the ovum as to produce male children at will.

Instead of reporting his theories and results to the profession, and awaiting their corroboration or rejection by other scientific investigators, he took the shorter and often disastrous road to fame by permitting his theories to be heralded to the public through the lay press. He made the mistake in placing before the laity the results of his investigations which he himself admits do not stand upon a solid scientific basis.

The Senate of the University of Vienna a year ago investigated his claims and severely censured him for the manner in which he promulgated his so-called discovery. And now comes his degradation and dismissal from the highest and most coveted position in Continental medical circles—that of an university professorship.

The Teutonic mind is not given to hasty action and this step, doubtless taken after mature deliberation and a consideration of all the circumstances having a bearing upon it, is conclusive evidence that the end was justified by facts, the full significance of which can not be realized at this distance.

DOCTOR JOSEPH CHARLES MULHALL.

Another one of the foremost members of the local medical profession has passed beyond the reach of the trials and sorrows of this life to a rest in the grave.

Afflicted with locomotor ataxia, and in a condition of desperation brought on by the progressive increase of this malady, added to that of other heavy burdens, Dr. Joseph Charles Mulhall, of this city, in a moment of despair, ended his life, January 12, by shooting himself through the heart.

His unfortunate death brought sorrow to a host of friends both in and out of the profession to whom he had endeared himself, not only by his unusual abilities as a physician, but by his charming personality as a man, his geniality, his kindheartedness and the display of the many notable traits of character with which he was richly endowed.

With the exception of several years spent in study in Europe, Dr. Mulhall's entire life was passed in St. Louis.

Born forty-nine years ago, he was reared and educated in his native city. His literary training was received at the St. Louis University, his medical education at the St. Louis Medical College. After graduating he spent several years in study in Berlin, Vienna, and in London, where he was a student of Sir Morell Mackenzie. Returning to St. Louis, he rapidly built up an extensive practice in his special department, that of nose, throat and chest diseases, and was soon recognized as a master in his specialty. His contributions to medical literature, while not numerous, have been of marked excellence and authoritative.

He was one of the founders of the Beaumont Hospital Medical College, and from its inception until his failing health, one year ago, compelled him to lighten his labors, held the chair of Nose, Throat and Chest Diseases in that institution.

He was at the time of his death a member of the American Medical Association, the American Laryngological Association, the American Climatological Association, President of the St. Louis Ear, Nose and Throat Society, and an ex-President of the St. Louis Medical Society.

The following resolutions of the St. Louis Medical Society, passed at a special meeting held in memory of him, and of the Faculty of the Beaumont Hospital Medical College, show the high esteem in which he was held by his professional associates :

The St. Louis Medical Society mourns the loss of one of its brightest ornaments, as well as one of the best beloved of its circle, Doctor Joseph Charles Mulhall

As a man, he won respect by his unswerving truthfulness, honesty and fidelity, and admiration by his dauntless courage in the face of

affliction, which, in a body weakened by disease, rose to the level of heroism.

As a friend, he endeared himself to us by his bright smile, cheery voice, and unfailing courtesy, but still more by his loyalty, manliness, and devotion to high ideals.

As a husband and father, he was loving and always solicitous for the comfort and welfare of his own.

As a physician, he stood, from the very beginning of his career, in the front rank, and soon won a place in his chosen branch of activity, with but few peers in the land, and no superior. None the less did he remain modest as to his own attainments, eager to recognize the qualifications of others, and kind and true to the youngest and most obscure, as well as to the fathers and masters in our profession.

Many are the sufferers who will now deplore the loss of his skillful and conscientious services.

This Society honored itself by making him its President in the year 1898.

We extend our heartfelt sympathy to his sorrowing family, and direct that these resolutions be spread upon the minutes of the Society, and that copies be sent to his relatives, to the scientific bodies of which he was a member, and to the local medical and lay press.

J. K. BAUDUY,
LUDWIG BREMER,
W. G. MOORE,
E. H. GREGORY,
JOS. GRINDON.

Committee.

WHEREAS, in the loss we have sustained by the decease of our respected friend and esteemed associate, Doctor Joseph Charles Mulhall, we, the faculty of the Beaumont Hospital Medical College, are desirous of testifying our respect for our departed member and of expressing our earnest and sincere sympathy with the family in their great bereavement, and with the medical profession in the loss of one of their ablest and most distinguished fellows; therefore be it

Resolved, that we express our sincere condolence to the family of our deceased confrère in this their hour of affliction.

Resolved, That the Beaumont Hospital Medical College has lost one of its most valued and efficient teachers.

Resolved, that the entire medical profession of which our departed fellow was a shining light has sustained an irreparable loss.

Resolved, That these sentiments be duly inscribed on the records of the College and that an engrossed copy thereof be presented to the family of the deceased.

Insanity Among American Troops in the Phillipines.—

The effects of a long and arduous campaign in a tropical country have been very trying on the American soldiers. It is stated that the number of cases of insanity among our troops exceeds that of any previous campaign made by any army, unless, perhaps, that of the British troops in India. Their constitutions have given away under the prolonged strain caused by weeks or months on the firing line, loss of sleep for days, inability to obtain sufficient and proper food and at regular intervals, together with the excessive heat, exhaustive marches through almost impassible stretches of swamps, and inadequate medical attendance in the brigade hospitals, have all contributed to the derangement of their mental faculties. As soon as possible they are invalided back to the United States and sent to the Hospital for the Insane, at Washington, D. C., for treatment.

Death of Dr. William A. Hammond.—Dr. William A. Hammond, former Surgeon-General of the United States Army, died in Washington, D. C., Jan. 5, 1900. He had a notable and somewhat checkered career. He was on the retired list at the time of his death, though at one time he lost his position in the army and was only restored to it again after a hard fight. Since his retirement from the army he has been conducting a sanatorium for nervous diseases in Washington. It will be remembered by the profession that within the past few years his name has been associated with a commercial enterprise having for its object the manufacture of so-called extracts from the various organs of the body. These were found to be worthless as regards therapeutic value, and dependent upon the nitroglycerin with which they were adulterated for whatever effects that were produced. They met with but little favor in the profession and were quickly withdrawn from the market. It is to be regretted that a person of Dr Hammond's abilities should have been so indifferent in regard to his professional reputation.

FOREIGN CORRESPONDENCE.

OBSTETRICS AND GYNECOLOGY IN THE NETHERLANDS.

Science in the Netherlands follows a particular line in consequence of the situation of the country and of its small extent, because of the latter not one of the other nations speak or understand our language; it being thought not worth while to study Dutch. It is on that account, therefore, that some articles really worth reading are not known in foreign countries. On the contrary, the Dutchmen themselves are thoroughly well up in the literature of other countries. A scientific accomplished Dutchman reads the periodicals at least in three languages—English, French, and German. The effect hereof is obvious. In the Dutch opinions, one sees distinctly a confluence of English, French, German, and American ideas. We want a characteristic line, and our topics as well as their mode of treatment are between several foreign countries. Because the German resembles the Dutch very much, the influence of the German science has been always the greatest, even so great that one could speak of partiality.

It has been a great merit from Treub against the Dutchmen that he has kept a close watch against this and that he has introduced and strongly defended the French methods and science. The pupils of Treub are, therefore, much more, though not exclusively, inclined to follow the French school.

But it must not be concluded that the Dutch gynecologists do not have their own literature. Every month the Dutch journal of gynecology and obstetrics appears, wherein besides the articles of several Dutch authors, are published the reports of the monthly meetings of the Dutch gynecological society. Very interesting papers were published on Fibromyomata, Cancer, and Ovarian Cysts with Pregnancy.

Fibromyomata and Pregnancy.

PROF. H. TREUB (*Geneeskundige bladen*, 1st reeks, No. 2).

PREGNANCY.—Under the influence of pregnancy the fibromyomata

of the uterus grow and soften because of the dilatation of the lymph vessels. As one can well understand, they are now sometimes difficult to recognize. With inconsiderate examining one can get the impression that they have vanished wholly, but that will be never more than an impression; examining thoroughly we will almost always find them. A second consequence of the increase of the richness of fluid of the tumors is that the connection between the uterine wall and the tumor becomes freer and thus it will be easier to enucleate the tumor if necessary. The tumor becomes smaller again in the puerperium, partly because the lymph vessels narrow themselves again and partly because the tumor too is influenced by the puerperal involution of the uterus. During the latter influence it happens sometimes that the whole tumor vanishes.

The combination of fibroids and pregnancy gives diagnostic difficulties when pregnancy is overlooked. It is known to you that Van Der Veer under the title of "Concealed Pregnancy" (*American Journal of Obstetrics*, 1889) has collected twenty-seven similar cases. The anamnesis of the different signs of pregnancy – objective and subjective, and above all the rapid growth of the tumor, must bring about our diagnosis in the right way. One of the most known dangers of the complication is the chance that pregnancy may be interrupted. This has its origin partly in endometritis which we find with submucous and intramural fibroids, partly in the hinderance which the fibroids present to a regular enlargement of the uterus. If an abortion has already occurred there is a great chance of *retentio placenta* and bleeding (as well through mechanical disturbance dependent on the tumors as through a too-strong attachment between placenta and tumor). Whether the combination will give, besides, more difficulties, depends on the situation and the extent of the tumor. If the tumor lies in the small pelvis it follows closely that there shall be disturbances in the functions of rectum and bladder. We observe quite the same symptoms as with retroflexion of the pregnant uterus, and without doubt the most important symptom, the urine retention, must too be imputed to a transposition of the urethra on account of the uterus. One sees this symptom very rarely in cervical myomata, but often in corpus-myomata which are situated in the small pelvis.

If the tumor lies above the entrance of the pelvis the respiration and circulation may be hindered, the functions of the gut may be disturbed, and if the tumor lies intra-ligamentous an ureter may be occluded by pressure. Naturally there can follow pain, but all of these symptoms may be wanting and in such cases the tumor may not be discovered at all, or only casually. If we happen to find a pedunculated submucous cervical fibroid stretching out in the vagina there is nothing to prevent us from cutting through the pedicle and removing the tumors. But if we find an intramural or subserous fibroid, and if there are no symptoms, it can be left alone, at least when we may foresee that the tumor will not hinder labor.

The only fibroids which impede labor are cervical myomata, at least when they are larger than a hen's egg. These must be removed if possible in pregnancy without hysterectomy (it does not alter the question when there is no pain at the time). If hysterectomy is not possible one ought to take into consideration Cesarean section against laparotomy in pregnancy with removal of the uterus whereby the child is surely sacrificed. The case becomes otherwise when the tumor gives symptoms. These are sometimes so powerful (the intestinal occlusion above all) that life may be in danger. It is plain that there is now an *indicatio vitalis* for surgical treatment. One observes the intestinal occlusion especially with incarceration of the fibroids in the small pelvis. Yet if the symptoms at the present are not so dangerous that one can foresee a great many difficulties that may arise from the continuance of pregnancy, surgical treatment is still advisable.

Now the question is simply, how is it to be done. We may bring on an abortion or remove the tumor. When we keep an eye upon the dangers in consequence of the hemorrhages which may result from abortion in these cases it is plain to us that in the beginning of pregnancy only the tumor ought to be removed. At the end of pregnancy we may preferably decide to bring on labor (*arte prematurus*), because then there is less danger of hemorrhage. If one wants to remove the tumor, that is very easy in case of a subserous fibroid: tying and cutting off the pedicle. In case of an intramural fibroid, on the contrary one must enucleate, but if in doing this the cavity of the pregnant

uterus becomes opened, total removal of the uterus and contents will be the only good and permissible treatment.

LABOR.—The influence of the tumors on labor is different. The simplest case is with pedunculated submucous fibroids. These are born before the child and very often the pedicle tears off. If this does not occur the pedicle must be cut through. The other fibroids produce certain conditions which they all cause in common. These are, especially, displacement of the situation of the child, and placenta previa; the latter has its origin in the hypertrophy of the mucous membrane which one finds especially in fibroids or in the inability of the tumor-smoothed mucosa to intercept the impregnated egg. With intramural fibroids there is almost always a weakness of the contractions. On account of this the pains can last very long (for twenty-five days—Freund). This has a strong advantage because the chance of rupture of the uterus becomes thus much smaller.

We see repeatedly that a fibroid which lies at first in the small pelvis is forced up until it is above the entrance of the pelvic cavity and the confinement labor may be concluded in the regular manner. These are, without exception, the tumors of the posterior wall of the corpus uteri, and not those of the cervix beneath the contraction ring. On examining for the situation of the fibroid in order to decide whether we may hope for this rising of the tumor it is enough to examine the condition of the *portio vaginalis*. With intramural fibroids of the posterior wall of the cervix the *portio vaginalis* surrounds the tumor like a sickle, while with tumors of the body which are sunk in the small pelvis, the cervix remains unchanged.

If the common obstetric operations to cause a reposition (this ought to be tried, if possible, during pregnancy) does not answer the purpose, we must, as I said before, cut through the submucous fibroid of the cervix and enucleate the intramural fibroid, if necessary, tamponing the bed of the tumor.

The subserous cervical fibroids, however, can not be removed with success during the parturition because the impossibility to control a possible bleeding renders the dangers too great. Now Cesarean section is the right thing to do with or without removal of the tumor of the uterus or of the ovaries

PUERPERIUM.—The fibroids cause in the puerperium in the first instance dangers for bleeding because of the slight power of contraction of the fibroids. Second, in case of cervical fibroids it threatens *retentio placenta* with resulting putrefaction, whereby it will be impossible to remove the decomposing remnants of the placenta in the ordinary way (near the fibroid). Sometimes total removal of the corpus uteri becomes necessary. Third, there still remains the likelihood of inversion of the uterus in regard to which Treub has formulated a theory which I will report to you later on. Fourth, the possibility that with poor antisepsis during parturitions the tumor will suppurate and give rise to peritonitis.

Ovarian Cysts, With Pregnancy, Labor, and Puerperium.

H. Y. WAGENER, Amsterdam.

PREGNANCY.—The same conditions stated in the article by Treub on fibroids applies equally well to ovarian cysts. Very often they cause no symptoms but sometimes they give rise to marked symptoms causing an *indicatio vitalis* for surgical treatment. It is always said that the cysts may influence the pregnant uterus in several ways and that they may cause abortion just as the fibroids, but from another reason. The study of literature, however, convinced the author that this is not the case, because abortion does not occur more frequently than the continuance of pregnancy. They certainly can cause, however, displacement of the uterus.

According to the author the influence of the tumor on the pregnant uterus is not very great and he firmly denies the influence from the growth of the uterus on the ovarian tumor. He does not think it proven that rupture of the cyst wall should occur more often now than without pregnancy. Suppuration occurs only after infection through the surgeon or like hemorrhage from twisting of the pedicle. The probable appearance of suppuration is doubted by the author, although he is acquainted with the statistics of Williams (*West London Medical Journal*, and *London Lancet*, 1897).

The author denies, too, the malignant degeneration of the cysts through pregnancy. He reports a case of rapid growth of the tumor

during pregnancy observed by Dr. Catherine v. Tussenbröck. However, he thinks that this rapid growth is not at all the rule, he rather believes that the cyst is pressed inward and can thus be more easily reached.

It is rather peculiar that the presence of an ovarian cyst often seems to effect an extrauterine pregnancy. Hardin has seen the complication of an ovarian tumor and pregnancy seventy times. Of these, fifteen were cases of tubular pregnancy. The treatment at present is usually ovariectomy; formerly, however, three methods were considered:

1. *The Evacuation of the Uterus by Causing an Abortion or a Premature Birth* (Barnes).—This treatment is usually to be rejected because the life of the child is often lost and the woman does not avoid ovariectomy. There may be an indication for this treatment when, on account of local conditions, ovariectomy is impossible (ovarian cancer), or, if, on account of the danger of life, ovariectomy is refused, and when, moreover, the family refuses to consent to Cesarean Section at the time.

2. *The Diminution of the Tumor Through Puncture*. At the present time this is considered only as a palliative to stop a sudden dyspnea, but is a very dangerous measure; for, too often a gut or the pregnant uterus is punctured instead of the cyst, or there results a bleeding or infection in the tumor.

3. *Removal of the Tumor (Ovariectomy)*.—This latter method is still employed and has even become popular. During pregnancy there can be no exception to the rule, the tumor must be removed as soon as it is diagnosed. Now two ways are open—the one by laparotomy, and the other through the vagina. In itself the vaginal way has some advantages, the shock of the operation to the patient is much less, one avoids a cicatrix (and thus, too, avoiding a hernia ventralis) and similar accidents. On the other hand, there will be much greater liability (according to the general hyperemia of pregnancy) to a severe troublesome bleeding of the vaginal wall. If a woman is in the second half of pregnancy one will be compelled to pull very strong at the pedicle of the tumor to get it in view, which will be followed very likely by an interruption of pregnancy. Now the vaginal way must be rejected, it must only be employed in case of small tumors which are operated upon in the first period of pregnancy and which are lying deep in the pelvis.

Through the introduction of ovariectomy the mortality to the mother has diminished from 25 per cent. to 3 per cent., that of the children from 50 per cent. to 19 per cent.

PARTURITION.— If the cyst lies wholly or partly in the small pelvis there is much chance, as we easily understand, of displacement of the child and of hinderance to the descent of the presenting part. So we generally can not count on the ordinary completion of the parturition. On the contrary, the presenting part of the child naturally exercises a pressure on the cyst by which the cyst may be pressed flat, may be replaced above the entrance of the pelvis, or may burst. Sometimes not only the cyst bursts but the vaginal wall also, and sometimes it happens that the vaginal wall alone tears open and then the cyst becomes pushed through the vagina and is born before the child.

The different methods of treatment may be divided into those which are directed to the cyst itself (reposition, punctures, incision, and ovariectomy), and those which are directed to the child (forcible extraction, version and extraction, embryotomy, and Cesarean section). The reposition of the cyst per vaginam (till above the entrance of the pelvis) succeeds in 25 per cent. of the cases. The advantages are that the customary completion of the parturition becomes possible; that the condition of the woman remains the same, and that ovariectomy can be done at a more favorable moment. There is always danger of the cyst bursting during the attempts at reposition (which in case of suppuration never is desirable and even very disadvantageous). One ought to be very prudent.

In the 72 per cent. of the cases whereby reposition does not succeed one must try another method. Puncture per vaginam may be tried which gives at the present time much better results than formerly, because suppuration of the cyst resulting from it now appears much less than formerly. Treub thinks the puncture an indispensable remedy in private practice, but in the clinic he performs it only when ovariectomy proves to be impossible. Where puncture, too, does not answer the purpose (when after the puncture there is not enough evacuation in the cyst) the opening of the puncture may be enlarged with a knife. To open the daughter-cysts the finger may be passed into the tumor. Fritsch advises to fasten the cyst wound to the vagina wound and to

tamponade the cavity of the cyst. One thus prevents the danger of peritonitis by infection of the contents of the cyst. Ovariectomy has been performed during parturition, three times per vaginam (Mackerron), four times by laparotomy

To be suitable for the vaginal operation, according to Freund, the cyst must lie wholly and deep in the small pelvis it must have a long pedicle, and must not be adherent. Prof. Treub goes further and thinks the vaginal ovariectomy the only commendable method in a clinic, at least when manual reposition fails. However, the operation may meet with obstacles and may even become impossible if the fetal head descends while the surgeon is occupied. In similar cases it is much better to puncture the cyst and afterwards perform ovariectomy.

By all of these treatments the tumor is diminished in order to allow the child to advance either spontaneously or with the known operations. On the contrary, the birth of the child has been attempted along with the undiminished tumor, and in a single instance this indeed has succeeded without harm to the mother or child. In other cases the cyst has been ruptured through the violent endeavors to pull the child past the tumor (either with forceps or foot-extraction), or the cyst is pressed out of the vagina wall. Embryotomy also often gives similar dangers. Perforation is indicated only when the child can not be born without serious consequences to the mother, notwithstanding the cyst being diminished or reponated; while Cesarean section is only indicated when we have to do with a solid tumor that can not be diminished by puncture whose removal is only possible when first the uterus is diminished in size and is cleared of its contents.

PUERPERIUM.—The changes which may be brought about in the puerperium, are:

1. *Torsion* of the pedicle with all the consequences of this condition caused, on one hand, because the pedicle is very markedly lengthened in pregnancy, on the other hand, because the belly wall is slackened, and thus the mobility of the tumor is increased.

2. *Suppuration*.—It is not at all surprising when suppuration appears after torsion of the pedicle, or after puncture, but that this should arise through the puerperium as such is not very probable.

When caused both by torsion of the pedicle and by suppuration, the diagnosis is often puerperal peritonitis.

For treatment it is of much value to know this fact, because there is as yet not much to be done for puerperal peritonitis, while in case of suppuration or torsion of the pedicle the patient may be saved by surgical treatment. The operation is always an ovariectomy, one day after parturition (v. Herff), during the first week (Kaltenbach), or later on (Rubeska).

Cancer of the Uterus, and Pregnancy.

PROF. G. H. VAN DER MEY (*Geneeskundige bladen*, 2d reeks).

The author, as well as Wagener, denies any influence of pregnancy on the growth of the cancer, or any influence of cancer on pregnancy in the form of premature birth. The statistics which are to be found in literature on this subject are partly inaccurate and partly contradicted through later evidence. On the contrary, the influence of cancer on parturition is marked when the cancerous growth has already progressed to some extent, and parturition can almost never be terminated without rupture of the friable cancerous tissue. These ruptures may extend into the rectum, into the bladder, and into the cavity of the belly, and on account of the severe hemorrhages may cause immediate death of the woman in labor.

If the carcinomatous degenerated tissue remains resistant during parturition, then labor may last very long, in fact, become impossible, and the woman may die undelivered, after being in labor for days. When the woman is greatly exhausted on account of hemorrhage and abundant fluxes, it is possible that she may die soon after the first contractions, from the fatigue of the labor, or through some trifling bleeding.

In the puerperium the tumor generally grows very rapidly. Many women die in consequence of exhaustion after a difficult labor from infection or of hemorrhage from cancer. Death is sometimes hastened from bladder or rectal fistulæ in consequence of the pressure to which the infiltrated tissue has so long been exposed. In this manner 57 per cent. of mothers die within three weeks, post-partum, and 69 per cent. of the children succumb.

Several ways have been tried—the curette, sharp spoon, galvano-cautery and thermocautery to diminish the heightened resistance of the cancer, all however without success. Even of less avail is the manual or instrumental removal of the hard cervix, while incision often causes dangerous hemorrhage. Notwithstanding these procedures, still an artificial termination of the pregnancy, with forceps or version and extraction, is generally necessary, which, however, most always produce tragical results. Perforation, at least, gives a little more advantage to the mother. In order to avoid these dangers to the parturient one advice is given to operate in pregnancy—to ignore the pregnancy and curettè the cancer (which is of no avail or causes abortion) or to break off pregnancy.

The treatment of van der Mey is as follows: If the cancer is but little advanced and the parametrium is still wholly free, we must perform total removal of the pregnant uterus as soon as possible—preferably per vaginam, or by laparotomy. Total removal per vaginam is easily accomplished. So it becomes unnecessary to cause abortion or to perform total removal in the puerperium; moreover, this is often difficult and dangerous on account of the hemorrhage.

Terminating the pregnancy before the extirpation is then alone necessary, when the child is still capable of living. If the disease has advanced further, and if the parametria are infiltrated, then the chances of radical removal are too small to be considered, and the mother is surely lost. The only thing which may be done is to save the child. Under these circumstances we ought to avoid, in pregnancy, all surgical treatment which might give rise to abortion. If we see, during labor, that the cancer is sufficiently softened, we may foresee a normal parturition, but, if not, Cesarean section is indicated. If we wish to obtain good results for the child after Cesarean section we must operate at once—at the very beginning of labor.

P. C. T. VON DER HOVEN, M.D.

Amsterdam, Holland, December, 1899.

SOCIETY PROCEEDINGS.

ST. LOUIS MEDICAL SOCIETY.

*Meeting of January 13, 1900; Dr. Robert M. Funkhouser.
President, in the Chair.*

Discussion on paper read by DR. N. B. CARSON (see page 25 of this number) entitled

Report of Results of Eighteen Tests Made for Rendering the Hands Aseptic Before Operation.

DR. AMAND RAVOLD.—While it is possible, by careful washing, to render the superficial epidermis clean and aseptic, if the skin be cut away from about the nail or if a portion of the skin be cut out and examined it will be found to contain bacteria, that is, micro organisms, and particularly the staphylococcus epidermidis albus. This micro-organism is found in the tissues deeper than our antiseptics will penetrate. A medical student, on whom I carried out a number of experiments, I almost invariably found the streptococcus present in the deep tissues. There is a great difference with different individuals, some may be readily sterilized so far as the superficial surfaces are concerned at least, while others are much more difficult.

DR. A. H. MEISENBACH.—The consensus of opinion obtains at the present time that the hands can not be made sterile by any known process. In 1898, at the German Surgical Congress, Döderlein made the positive statement that it could be done and this was combated by Mikulicz, of Breslau, who made an extensive series of experiments and came to the conclusion that in a great percentage of cases the hands could not be rendered sterile. Fürbringer also has made experiments in this direction, scrubbing the hands with soap and hot running water, using a bichloride solution, and finally immersing in alcohol, but nevertheless bacteria were still found. All individuals are not alike in regard to bacteriologic resistance or tendency to harbor bacteria, it

varies in different individuals; or the system of one may be in such condition that it overcomes the virulent condition of the streptococci.

Recently Olshau-en made the statement that it was impossible to cleanse the vagina thoroughly; that it was the hardest part of the human anatomy to cleanse; but in spite of that fact very seldom conditions occur that are directly traceable to the bacteria which were left in the vagina, and the method that he advocates and which is used by him is similar to that used by Fürbringer.

Schleich has called attention to the importance of the mechanical feature of rendering the hands aseptic. This is done by some such substance as cornmeal, marble-dust, or sterilized sand, by which the hands are rendered clean, and then followed by thorough scrubbing with soap and hot water. The sand, marble-dust, or cornmeal serves to get into all the crevices and little corrugations. Park, of Buffalo, also has proved that by means of cornmeal or similar substance we get a perfectly aseptic condition.

Then, another point, it is not alone the hands of the surgeon that is to be looked to, but he should observe general cleanliness; the surgeon and his assistants as well as the patient must be scrupulously clean, this is of paramount importance. When we take into consideration the result of the various operators we must come to the conclusion that there is no known process by which the hands can be thoroughly sterilized and this has been proven by Mikulicz and in the large clinics of Europe generally; and it is evident that the outcome depends upon the attenuated condition of the bacteria that exists. In the cases of the Bassini operation it has been the observation of many operators that where catgut has been used there is a form of catgut suppuration which will take place in spite of the fact that we use catgut that is supposedly sterile. I have seen it once or twice where the Bassini operation was done and catgut sutures used suppuration occurred, but the outcome of the cases was perfectly satisfactory as far as the wound was concerned. It could not be traced to any direct cause and this has been observed by many operators. König called attention to it. He used catgut a good deal and on account of this occurring in his observations he for a time abandoned catgut altogether and used nothing but silk. But there was a revulsion of surgical ideas in

regard to catgut and at present it is one of the favorite suturing materials, and I am very partial to it and believe that if we properly prepare the catgut it is innocuous and a perfectly satisfactory material. Especially in a Bassini operation I think nothing gives as satisfactory results as catgut.

DR. H. C. DALTON.—I pursue the routine which has been mentioned to night in all my cases and try to be as clean as possible and I get a fairly good result, which I did not formerly get in my first attempts at operating, and I began to see my cases improve as I improved in my technique. I think we can not commend too highly the work of Dr. Carson.

DR. L. T. RIESMEYER.—I would like to ask how the bacteriological experiments were made; what culture medium was used and how the medium was inoculated.

DR. CARSON.—We used broth and also gelatine once or twice. Before washing the hands a piece of bamboo was thoroughly washed in sterilized water, then removed from the receptacle with the sterilized forceps and passed around the nails, under the nails, between the fingers, and then dropped into the culture media in the tube and precautions taken to prevent infection from the outside. After washing the hands the same procedure was carried out and the bamboo again dropped into the culture media, also the sutures that were removed after finishing the operation were placed in the culture media; when we removed the sutures after the first dressing the same process was gone through.

DR. RIESMEYER.—Much stress has been laid by some experimenters upon the existence of a larger number of bacteria in the deeper layers of the skin than in the superficial layers; some have, therefore, come to the conclusion that too much scrubbing of the hands with a brush or cleansing the skin by mechanical means would only increase the number of bacteria. We know that bacteriological experiments are being made constantly and that the experimenters, who wash their hands a long time with the same method of disinfection, such as the use of green soap, alcohol, and corrosive sublimate, get a larger number of germs than those who do not carry the process to such a great length of time. The results that have been attained thus far by the

various observers have been so contradictory that the whole subject of disinfection of the hands is still a very unsettled one.

DR. H. C. FAIRBROTHER.—I would like to have Dr. Carson state in his closing remarks whether or not this treatment of the hands does not produce irritation of the cuticle and sometimes dermatitis; also if he made cultures before and after cleansing of the hands by green soap, alcohol, chloride of lime, etc. I was not aware that Park had referred to the use of cornmeal. I have been using cornmeal for some time and have never heard it referred to before and I can not commend it too highly. Cornmeal and mustard also may be used. There are few hands that can bear washing with the green soap without irritation, approaching dermatitis, but if cornmeal is used this difficulty is obviated.

DR. J. C. MORFIT.—I doubt if anyone's hands will stand the test of deep inspection such as Dr. Ravold referred to. I think no method would stand the test when it comes to this.

DR. HENRY JACOBSON.—I object to cutting the finger and thumb off the rubber glove. Rubber gloves cause the hands to perspire and the perspiration brings the germs from the deeper layers to the surface which run down the opening of the glove and thus infects the wound.

DR. CARSON.—In regard to the method of cleansing the hands and the time required, etc., I will say I am perfectly well aware of the fact that the different parts of the hands and arms are more or less tender, that is, that there is a variation and that intelligence must be used in cleansing these different parts. While I use brushes generally, I do not use those hard brushes that tear the skin, nor do I use very soft ones. As to the time, I know how long it appears when you count the seconds and minutes in timing ourselves. I do not care whether it is when we are taking the patient's temperature, or washing our hands. We have a clock convenient to the hospital which I can see very plainly, and in cleansing my hands I time myself by this clock.

As to the use of chlorine, it is necessary that this should be continued for sometime and that it be rubbed well into the pores of the skin and into the inequalities so as to reach all the crevices. The chlorine gas that is developed reaches the bottom of the glands and follicles and destroys the germs that may be therein contained. I do

not claim that there are not other methods of cleansing the hands, but this method has given me good results. As to whether we reach all the germs in the deeper tissues or not I do not know.

Unfortunately, we can not make the experiment referred to by Dr. Ravold—cutting out pieces of the skin and making cultures. Kocher, in his paper read last spring in Chicago before the American Surgical Association, asserts that the hands can be cleansed. He uses simply water, scrubbing for ten or fifteen minutes carefully, and then follows with alcohol, bathing the hands five minutes at least in the alcohol, 85 per cent. He then proceeds with the operation, and does not use water unless the operation is unusually long. We have the evidence of such men as Fürburger and Döderlein, and of Lockett, Howard Kelly, and others in this country, who have made experiments and proved that the hands can be thoroughly disinfected, and it makes no difference what method is employed.

As to the statement, that by the sweating of the hands the germs are washed out from the depths of the follicles and glands, I will say that there have been some experiments made along this line. And it has been found that in a large per cent. of the cultures there was no growth, showing that the idea that the germs are washed out from the depths during the operation is not true and that really the hands are sterilized. The one culture made by me confirms just so far as it goes results already obtained.

Now, as to the cutting away of a part of the finger and thumb of the glove, I will say that I can not feel well enough through the glove, so I cut off the end of the index-finger and thumb of the glove. I have confidence in the cleansing process and feel certain that no infection results from this. My first assistant also wears rubber gloves, but they are not cut; the other wear cotton or Lisle thread.

Election of Officers of the St. Louis Medical Society.

—At the last meeting of the year, December 30, 1899, the St. Louis Medical Society elected the following officers to serve for the ensuing year: President, Dr. Robert M. Funkhouser; Vice President, Dr. Frank Henderson; Recording Secretary, Dr. C. R. Dudley; Corresponding Secretary, Dr. H. A. Geitz; Treasurer, Dr. A. R. Kieffer.

REPORTS ON PROGRESS.

NEUROLOGY.

The Common Forms of Meningitis.

C. L. Dana (*Journal of Nervous and Mental Diseases*, December, 1899) describes the common forms of meningitis and gives especial prominence to a description of serous meningitis. Twenty forms of meningitis are described in literature, but of these only eleven have actual existence or clinical importance, and, dropping temporal distinctions, only nine.

An analysis of 137 cases in Bellevue Hospital shows the following :

External pachymeningitis (from mastoid disease).....	2
Internal pachymeningitis (hemorrhagic and syphilitic)...	12
Fibrinopurulent leptomeningitis.....	52
Cerebrospinal leptomeningitis.....	15
Tuberculous leptomeningitis.....	14
Serous meningitis { Traumatic }	15
{ Alcoholic }	
{ Infectious }	
Chronic leptomeningitis.....	3
Unclassified forms.....	19
Spinal meningitis.....	5
Total.....	137

CASES WITH AUTOPSY.

Cerebrospinal leptomeningitis.....	5
Purulent cerebral leptomeningitis.....	18
Tuberculous leptomeningitis.....	7
Serous leptomeningitis.....	7
Pachymeningitis interna.....	9
Total.....	46

Practically all cases of acute cerebral meningitis are cases of cerebrospinal meningitis, so we can abandon the distinction cerebral and spinal.

Dana, under serous meningitis, describes three forms:

1. Traumatic serous meningitis resulting from injuries to the head and marked by stupor, stiff neck, contracted pupils, elevation of temperature, hyperesthetic skin, and rigidity of muscles. Later, slight returning consciousness with some delirium and evidences of pain in the head. In three or four days a gradual disappearance of all symptoms, due to absorption of an acute serous transudation.

2. Alcoholic (and toxic) serous meningitis sequent to profound alcoholic intoxication or prolonged use of narcotic drugs. The picture closely resembles one of ordinary purulent meningitis except less severe. It is the form described in Dana's text-book as "alcoholic wet brain."

3. Serous meningitis of Quincke which is an acquired acute hydrocephalus and occurs oftenest in children.

Lumbar puncture is commended as a means of diagnosis and a method described. An antitoxin needle, carefully sterilized, is carried 3 or 4 centimeters between the third and fourth lumbar vertebræ when the subaracnoid space is reached and 5 to 15 cm. of fluid drawn off into a carefully prepared test-tube.

Neurasthenia; Its Symptoms and Treatment.

Landon Carter Gray (*Medical News*, New York, December 16, 1899) places overwork, mental or physical, and great emotions at the head of quite a formidable list of causes of this condition. He says the condition may persist after the removal of the cause. He differentiates neurasthenia from melancholia, hysteria, general paresis, bromism, locomotor ataxia in its early stages, and hypochondria. (Almost all of these conditions present neurasthenic symptoms in their early history, so that we may only look more carefully for them before giving a diagnosis). The author says the prognosis of neurasthenia is excellent, provided the cause is removable, but it frequently happens that the cause lies beyond our reach. His recommendations as to treatment are in line with those of nearly all recent writers. He advocates the use of electricity and, when applicable, massage, limited rest cure—rest in bed ten or twelve hours in the twenty four, with care during the remainder of the day not to become fatigued. Iron, quinine, strychn-

nine, and Fowler's solution, with abundant feeding, are recommended. Careful directions as to mental diversion are to be given.

Cerebral Diplegia.

James S. Collier (*Brain*, Autumn, 1899) offers a very complete and satisfactory discussion of the above condition. He reports several cases, with autopsies, and presents pathological findings from numerous observers, besides giving a full bibliography to date. Summary of etiological factors as follows :

One-third of the recorded cases of cerebral diplegia are without known clinical antecedents.

Maternal morbid states are probably by far the most important clinical antecedents, and such states have probably existed in many of the cases to which no definite cause can be assigned.

Premature birth has probably no causal relation with diplegia.

The causal relation of birth-injuries and asphyxia neonatorum to this condition has been much overestimated and the absolute proof of it is as yet wanting, notwithstanding the frequency of the clinical association.

Some cases certainly follow cerebral vascular lesions.

Acute diseases sometimes precede the onset of symptoms, but whether in all cases as the initial factor in disease, or in some cases only as an immediate exciting cause, has not been demonstrated.

The summary of conclusions as to the pathology is as follows :

1. The cerebral lesions found in nearly all cases of diplegia are (*a*) atrophy of the convolutions; (*b*) porencephaly; (*c*) no coarse lesion but degeneration and disappearance of the cortical neurons.

2. The initial morbid process producing diffuse and lobar atrophic sclerosis are (*a*) degeneration of the neurons of the cerebral cortex; (*b*) vascular lesions, embolism, thrombosis, and intracerebral hemorrhage; (*c*) perhaps meningeal hemorrhage.

3. Porencephaly may be produced by (*a*) arrest of development with tissue absorption owing to fetal vascular disease; (*b*) direct injury to the brain; (*c*) vascular lesions after birth, embolism, thrombosis, and intracerebral hemorrhage; (*d*) it may also result from the process of tissue absorption and shrinking of the brain substance occurring in

cerebral sclerosis, and may result as a secondary process in degeneration of the cortical neurons.

4. Bilateral spastic hemiplegia is connected with deep lesions of the hemispheres. The other forms of diplegia are connected with superficial lesions of the hemispheres.

5. Athetotic and choreic diplegia are associated with superficial lesions of the cortex. In these types lesions of the corpora striata are not constant.

The diseases most likely to be confounded with cerebral diplegia are Marie's hereditary ataxy, Friedrich's ataxy, disseminate sclerosis occurring in children, and painful spastic paralysis.

Only the slight forms of generalized and paraplegic rigidity afford any scope for treatment.

Acute Delirious Mania.

Frederick J. Mann (*Journal of Nervous and Mental Diseases*, December, 1899) describes this form of insanity and its predisposing causes. In etiology, however, it does not differ from ordinary mania, except that it is much more likely to follow infectious processes. The pathology accords with the stage of the disease. In the excited period active congestion and marked hyperemia of the brain which is succeeded by venous stasis, and exudation of the blood elements which cause pressure symptoms. The membranes are congested, swollen, and sometimes show adhesions. The death rate is high, 50 to 75 per cent., and the average duration of life in fatal cases from one to three weeks. Restraint in a cool room, forced feeding, chloral, trional, and sulfonal to promote sleep, are the chief measures adopted.

Relation of Migraine to Epilepsy.

Wm. G. Spiller (*Amer. Jour. of the Med. Sciences*, January, 1899) gives the following summary from a study of some very interesting cases and the late literature :

1. Attacks of migraine occur associated with nausea and vomiting; this form is known as simple migraine and usually remains unaltered during the life of the patient.

2. In other cases visual disturbances (hemianopsia, scintillating

scotoma, amaurosis, etc.), are associated with the migraine and the disease is then known as ophthalmic migraine.

3. When paralysis of the ocular muscles occurs with migraine the disease is described as ophthalmoplegic migraine.

4. Migraine, especially the ophthalmic form, is related to epilepsy, and the attacks of migraine may precede for years the convulsive attacks of epilepsy, although in most cases of migraine no convulsions are ever detected.

5. In some cases epilepsy appears in the form of one or more of the disturbances seen occasionally with migraine, and later, even after many years, convulsions develop. The disease may be epilepsy from the beginning.

It matters little, with our uncertain knowledge of the pathology of the two diseases, whether we regard these as abortive cases (*formes frustes*) of migraine that later become associated with epilepsy or as abortive forms of epilepsy (sensory epilepsy) in which the convulsions later become apparent, provided we recognize a relation between some forms of migraine and epilepsy.

The Teaching of Psychiatry.

Henry M. Hurd (*Johns Hopkins Hospital Bulletin*, November, 1899), in the presidential address at the annual meeting of the American Psychological Association last May, discussed the great difficulties involved in the study of this very important branch of medical science. "Until vital processes, which are vastly more appreciable than mental processes, are known and satisfactorily demonstrated it is unjust to charge the alienist with lack of scientific precision because he does not explain the physical basis of mental action and the conditions of its exercise." Hurd looks hopefully to the newly-organized pathological laboratories for new methods and substantial discoveries and says the workers must devise methods far exceeding in delicacy and precision those required by other branches of medicine. The teaching of psychiatry to students should be in the last year of the medical course after full training in psychology, neurology, physiological chemistry, bacteriology, and clinical medicine. The student should see the various phases of insanity frequently and thus by watching this develop-

ment become thoroughly familiar with them. A detention hospital with facilities for classification for the reception of all cases of insanity in the dependent class should be in every city and opportunities for observation given to students so that they may learn to discriminate between those ephemeral cases the result of alcoholic and other habits or of delirium and psychoses which will necessitate sending the patients to an insane asylum. When the student has become familiar with the clinical features of ordinary insanity he should have an opportunity to recognize its terminal forms in large institutions for the chronic insane and an added opportunity to study the pathology of the disease. Afterwards should come instruction in medical jurisprudence and in the varied relations of the insane to the law, the State, and to society in general. For psychiatrists special graduate study should be afforded at some of the great medical centers and preferably in connection with one of the pathological institutes. Here a training should be given in psychology and the methods of studying normal and abnormal processes. Anthropology, pathology, and histology as well as neuropathology should be pursued.

BLISS.

OBSTETRICS AND GYNECOLOGY.

Complete Exploration of the Peritoneal Cavity in Abdominal Operations.

Howard Kelly (*Medical News*, December 16, 1899) recommends a systematic examination in abdominal operations of the entire peritoneal cavity in every instance in which the condition of the patient does not forbid. The examination is made by inspection and by palpation, the incision is enlarged, if necessary, in order to admit the hand and forearm into the abdominal cavity. If the condition for which the abdomen is opened is a septicemia, only a limited examination is made. In order to maintain asepsis the arm is thoroughly sterilized, or a rubber glove, reaching to the shoulder, is advised.

With the patient lying flat on the table or with the hips slightly elevated, all the organs are examined, beginning with the pelvic viscera

and ending with the liver and kidney. By means of this examination in a series of 200 abdominal sections he has had occasion to remove the appendix 25 times. It is possible to ascertain the condition of the kidneys, the presence or absence of gall-stones or pathological conditions in other organs. A knowledge of the condition of the other organs in abdominal operations is of great satisfaction to the surgeon, but even if there is not a great risk of disseminating septic material, the increased shock that will undoubtedly result from these manipulations must be borne in mind.

Colloid Degeneration of the Ovaries.

Mary A. Dixon Jones describes (*Medical Record*, November 4, 1899) a condition of colloid degeneration of the ovaries in which all the structures of the ovary are invaded by, destroyed and replaced by colloid material. This substance shows a special predilection for the ova and in the examination of a large number of microscopic sections of the ovary the invasion of the Graafian follicles by the colloid material and the destruction of the ovum was present in a large number. This condition was found present alike in the ovaries removed from both young women and old, in ovaries apparently healthy and in those diseased. Associated with this condition was generally found a condition of ovaritis, endothelioma and gyroma. The colloid degeneration appeared to be a sequence of a previous inflammatory condition and has a destructive effect upon not only normal structures but also upon tissues which have undergone pathological changes. The nature of colloid degeneration is not yet understood, neither is that of its origin the cause that produces it. There are no special symptoms referable to the ovaries by which it can be recognized and only the customary evidences of disease, suffering, and distress are seen. According to the author's investigations colloid degeneration is not an infrequent condition; in microscopic sections of eighty-seven pairs of ovaries the ovaries of forty-seven women showed a condition of colloid degeneration.

The Influence of Pelvic Disease on Insanity in Women.

Owing to the intimate relationship between the nervous system

and the female reproductive organs it is thought that certain conditions in one exercise an influence over the functions of these two systems. It is generally believed that diseased or deranged conditions of the female genitalia is a more or less potent factor in the etiology of certain nervous conditions in the female. This, however, has not met with complete acceptance and is a constant cause for argument between the neurologist and the gynecologist.

Tomlinson and Barrett (*Jour. Am. Med. Ass'n.*, September 30, 1899) have investigated the influence of pelvic disease on insanity in 211 women. In 38 of these the mental disturbance of the patient was apparently increased by the pelvic disease, in the remaining cases it appeared to have no influence. There was no particular form of insanity associated with pelvic disease nor was there any relation between the insanity of the mental disturbance and the severity of the mental disease. From their point of view menstrual disorder and pelvic disease, while quite common among insane women, in the majority of cases bear no apparent relation to insanity; nor is the intensity of the mental disturbance in proportion to the gravity of the physical disease.

In cases where the insanity has existed for more than a year, or the patient has a defective nervous organization, treatment of the disease of the generative organs is practically without effect on the insanity, and in such cases operative interference resulting in the establishment of an artificial menopause almost invariably hastens the onset of dementia.

Operative interference is called for in the treatment of pelvic disease among the insane for the same reasons that would determine the necessity for such treatment among the sane.

In order to determine whether or not treatment of the disease of the generative organs will have a curative effect on the insanity, it is important to know the family and personal history of the patient with regard to the presence or absence of evidence of unstable or defective nervous organization, the length of time the insanity and disease of the generative organs have existed, and to what extent the general health of the patient is affected by the pelvic disease independently of the insanity.

Pregnancy Complicated by Abdominal and Pelvic Tumors.

There can be no question about the fact that the majority of instances of pregnancy complicated by abdominal or pelvic tumors demand operative relief, and often, earlier the better. Many operators hesitate from a fear of causing abortion, but according to Hall, of Cincinnati, who has written an interesting paper on this subject (*Jour. Amer. Med. Ass'n.*, September 2, 1889) the danger of abortion or premature labor following the removal of ovarian tumors has been greatly exaggerated. Hall advises operation for the removal of ovarian cysts in all cases where the tumor is small and fixed in the pelvis below the uterus; where it can not be lifted out of that cavity. Likewise where there are any complications such as twisted pedicle, ruptured cyst, or where the tumor gives rise to inflammation of the contiguous structures. If the tumor is of moderate size and above the uterus, or if it is too large to occupy the pelvic cavity and the patient has not suffered from its presence, there being no complication, he does not operate. Fibroid tumors of the uterus, and especially where they occupy the lower segment where it might interfere with the birth of the child at term, should be removed. Considering the liability of an ovarian cyst to rupture during labor, the marked increase of the pressure symptoms from its presence together with the displacement of the gravid womb over distension of the abdominal muscles and the resulting increasing of labor pains render objectionable the plan advocated by Hall to defer operation even where the cyst is outside the pelvic cavity.

DUDLEY.

PEDIATRICS.**Rickets.**

Lovett (*Boston Medical and Surgical Journal*, 1899; *Archives of Pediatrics*, 1900) read a paper on this subject before the Suffolk District Medical Society on the frequency of rickets in infancy. Four hundred consecutive infants under two years of age were examined for evidences of rickets. Eighty per cent. showed more or less marked signs. About 40 per cent. of the cases were Russian and Polish Jews.

Only 12 per cent. came from Southern races. Breastmilk was a part of the diet in 43 per cent. and formed the whole in 18 per cent. Unhygienic surrounding was the only influence in common and this must be considered an important cause of rickets.

Laboratory Milk.

Starr (*Archives of Pediatrics*, January, 1900), in a clinical study, discusses the value of laboratory milk in substitute infant feeding. He recognizes that properly prepared laboratory milk has certain advantages. These advantages are the cleanliness of the original milk; pasteurization, as an additional measure to insure asepsis; and, finally, uniformity in strength and quantity. Clinical experience fails to bear out the theory that such milk is the most perfect substitute for normal human milk.

The following is a generalization of the results of over two years' study of the use of laboratory milk food in substitute feeding:

(a) The satisfactory: Embracing the very exceptional cases of perfectly healthy children who have been continuously fed upon laboratory milk, from or shortly after birth, up to the beginning of a mixed diet. The author has seen but three of such cases in as many years.

(b) The partially satisfactory: Including cases much greater in number than the preceding class, in which laboratory milk was used for a considerable period—six months to a year—without producing active illness, but gradually inducing health conditions necessitating a change of foods. Sixteen cases of this class were seen.

(c) The unsatisfactory: The instances of this group are by far the most numerous, and in it may be placed the vast majority of infants fed upon laboratory milk after the first eight weeks of life. It embraces those cases in which laboratory milk feeding must of necessity be discontinued on account of the onset of some acute disorder of undoubted dietetic origin. In this class thirty-five cases were seen.

The unhealthy conditions referred to in the second class present the following group of symptoms: Pallid, dry skin; dry, lusterless hair; flabby, soft muscles; indifferent appetite; inactive bowels, with clay-colored evacuations; light-colored urine; listlessness; peevishness, and restless sleep.

In the third class the acute disorders are : Acute gastro-intestinal catarrh, and infantile scurvy.

The author ascribes the reason of the failure of this milk in practice to the fact that the fat is removed and in combination the emulsion is not restored. This lessens the digestibility of the proteids.

Tuberculosis in Childhood.

Still (*Pediatrics*, October 15, 1899) draws the following conclusions from an exhaustive study of the morbid anatomy of tuberculosis in infancy and childhood :

1. The commonest channel of infection with tuberculosis in childhood is through the lung.
2. Infection through the intestine is less common in infancy than in later childhood.
3. Milk, therefore, is not the usual source of tuberculosis in infancy, perhaps owing to the precautions taken in boiling, sterilizing, etc
4. Inhalation is much the common mode of infection in the tuberculosis of childhood, and especially in infancy.
5. The overcrowding of the poorer population in the large towns is probably responsible for much of the tuberculosis of childhood, and prophylaxis must be directed to the prevention of this overcrowding, the improvement of ventilation, and the inculcation of the extreme importance of fresh air during the earliest years of life.

Tuberculous Adenitis.

Morgan (*Pediatrics*, October 15, 1899) believes that tuberculosis of the head and neck is not so common as it was fifteen years ago. The chief points of interest as to the etiology are clustered around the soil, that is, the tuberculous individual; and the paths by which the seed, that is, the tubercle bacillus, travels to the glands. The sites especially favorable for the entrance of the tubercle bacillus are : (1) Teeth and gums; (2) tonsils; (3) naso-pharynx, especially when affected by adenoids. The prophylactic treatment resolves itself into measures directed to keep mouth, fauces, and tonsils healthy. If tuberculous glands appear the ordinary measures that are effective against tuberculosis elsewhere must be instituted. Hygienic rules

must be carefully observed. Disease of the mouth and pharynx must be treated. An application of a mixture of iodine, iodide of potash, and glycerine to the pharynx has reaped the best results. If glands still increase in size after treatment excision should be promptly resorted to.

Parkinson's Syndrome.

Weill (*Am. Jour. Med. Sciences*, January, 1900) reports a case in a girl in whom Parkinson's syndrome was present. The age of the patient was ten and a half years. The cause was traced to a severe fright in the tenth year. Fifteen days later pain in the head, aphasia, and right hemiplegia followed. The whole body became paralyzed. In a month this improved but the symptoms of paralysis agitans supervened. A year later, when seen, the head was inclined slightly forward, the back was arched, the arms semi-flexed and exhibiting a condition of slight rythmical ascillations. These were absent during sleep. The author attributes the affection to some infectious disorder involving the nerve centers.

ZAHORSKY.

MEDICINE AND THERAPEUTICS.

Specific Treatment of Tuberculosis.

Petruschky (*Berlin klin. Woch.*, Nos. 51 and 52) discusses the specific treatment of tuberculosis. The search for specific remedies for infectious diseases is quite justified considering the favorable results obtained in syphilis, malaria and acute articular rheumatism by the use of specific drugs. In the fight against tuberculosis, too, almost every drug that Nature or the laboratory of the chemist could furnish have been tried and found wanting. A few of them, such as iodoform and the creosote preparations are still used and are unquestionably of value; nevertheless the statement made by Kobert, in last year's Tuberculosis Congress, in Berlin, that at present we have no drug that is a specific against tuberculosis, must be admitted to be correct. We thus occupy the same attitude toward the treatment of tuberculosis as

when R. Koch, ten years ago, announced the discovery of a remedy—specific in a somewhat different sense.

The so called old “tuberculin” of Koch, which, as is well known, consists of filtered glycerin bouillon cultures of tubercle bacilli, sterilized by boiling and concentrated to $\frac{1}{10}$ of its original bulk, has two properties that mark it as “specific:”

1. It produces in minimal doses both a local and a general reaction in tubercular individuals.

2. By means of the injection of steadily-increasing quantities an immunity can be produced against this toxin but not against other toxins.

The first of these properties is of indisputable value in the early diagnosis of tuberculosis. Even Virchow, who has always been one of the sturdiest opponents of Koch's results, now strongly urges the injection of tuberculin for diagnostic purposes, at least in animals. The second property of tuberculin upon which its therapeutic value depends is only of late being properly and calmly appreciated. Koch's original announcement was greeted with a burst of enthusiasm. A tuberculin mania swept over the medical world, entirely irrational results were expected of tuberculin, so that a reaction was inevitable. Reports of unfavorable results accumulated and were ascribed to tuberculin not to its irrational use. Koch himself had advised the use of tuberculin only in incipient phthisis, and as a matter of fact most of the cases in which the use of tuberculin seemed directly harmful were advanced cases or those with secondary infection. Then, too, the unwise use of doses that produced powerful reactions could not fail to greatly weaken susceptible individuals. It is as true of tuberculin as of other bacterial poisons that not every administration of increasing doses produces immunity. On the contrary, five possible results may occur:

1. Acute poisoning due to excessive doses.
2. Chronic poisoning.
3. Alternation between poisoning and immunity.
4. Immunity properly produced.
5. Lack of any result owing to a too timid procedure.

The last possibility can be observed in the use of tuberculin as

well as other toxins. The proper dose is one that produces a local reaction, as powerful as possible, but which causes only a minimal general reaction.

There are two more facts that must be remembered. One is the great difference in the susceptibility of the phthisical individuals toward tuberculin. One reacts to 0.1 mgr, the other not until 5 mgr. is reached. Accordingly, it is well to begin with a small dose and increase the dose, not too slowly, until the limit of toleration is reached, thus—0.05 mgr., 0.2 mgr., 0.6 mgr., 1 mgr., 2 mgr., 5 mgr. When the first reaction has been obtained, a second precaution must be observed: After the first reaction the sensitiveness toward tuberculin is usually increased; accordingly the dose must not be increased at once after the first reaction, but if the latter was at all violent, should even be temporarily diminished. After this stage of temporarily increased susceptibility has been overcome the increase of the dosage may again proceed.

The author considers the attempts of Klebs and others to obtain a preparation containing the therapeutic but not the toxic elements of tuberculin quite hopeless and based on a false theory of the action of tuberculin. Koch's aim has been the opposite one, and in his TR he has produced a substance that contains all the toxic elements of tubercle bacilli. And, indeed, TR will still produce a strong reaction in consumptives who have been rendered quite immune to high doses of tuberculin. It is, therefore, of value if we desire to carry the immunization of patients higher than is well possible with tuberculin alone.

The author believes, however, that phthisis is but rarely curable by a single course of treatment, no matter how high the dosage be carried, and then only if the case is in its very incipency. The time necessary for a complete cure has been greatly underestimated. Three or four months after the patient has been rendered insusceptible to large doses of tuberculin and the injections have accordingly been stopped, his old susceptibility will again have returned. In this case a second course of treatment must be inaugurated, and this repeated each time the sensitiveness toward small doses of tuberculin returns. In the author's successful cases two courses of treatment usually sufficed. He reports 22 cases entirely cured (that is, physical signs

normal, tubercle bacilli absent, tuberculin fails to cause a reaction); of these 4 were relatively "advanced," 18 incipient.

He warns earnestly against the use of tuberculin where there is much destruction of pulmonary tissue. The action of tuberculin does not consist in regenerating diseased tissue but destroying and eliminating it. Accordingly its use is permissible only where the destruction of the diseased tissue does not endanger the integrity of the entire organ. In other words, the proper subjects for tuberculin therapeutics are only the incipient cases.

The above article, and in particular the systematic report of his 22 cases, is of the greatest interest and will well repay perusal. The author is one of the leading bacteriologists of Germany, having spent many years as chief of the clinical department of Koch's institute and being now at the head of the bacteriological institute of the city of Dantzig.

TAUSSIG.

SURGERY.

The Complete History of a Case of Total Extirpation of the Stomach.

Maurice H. Richardson (*Boston Med. and Surg. Jour.*, September 28, 1899) gives the history of a case which gained but little in weight after the operation and in which there was always the sensation of dragging or drawing in the epigastrium. Several months after the gastrectomy, gradually increasing obstruction of the transverse colon occurred, and an intestinal fistula through the laparotomy wound permitted the escape of most of the food. The patient died of recurrence of the disease within the abdomen.

The author speaks hopefully of the operative treatment of cancer in general, but not especially of those of the stomach. He has found the lymphatic system involved in very few of the cases which he has investigated with a view to operation, so concludes that a bold and far-reaching procedure may be of much avail. The suffering is less, as a rule, in operated cases than in those which have not been so treated, besides, the patient has been given one last chance. These two considerations justify, in Richardson's opinion, operative measures.

Death has been caused in different instances by gangrene of the

transverse colon, as a consequence of its mesocolon being accidentally ligated.

His statistics show that a greater amount of good than has been supposed, has been accomplished by the operative treatment of gastric cancer. This most praiseworthy article closes with the remark that the indications for resection of the stomach are at present very narrow and that they can only be broadened by an exploratory operation which alone can enable one to make a very early diagnosis.

Gastrostomy in Addition to Gastro=Enterostomy.

Professor Witzel, the celebrated surgeon, makes a statement (*Centralbl. f. Chir.*, November 11, 1899) which is of decided interest in connection with the article of Rutkowski. The former combines the two operations, but with this difference: He performs the gastrostomy first, lest the tube be drawn out of the intestine if too much manipulation follow its insertion.

While making his anastomosis, Witzel fastens the tube with catgut thread to the cut edge of the stomach and intestine. Milk and brandy are poured into the tube while the patient is yet on the table, this *immediate* distension of the efferent intestinal coil being, to the author's mind, the only absolute protection against a possible flow of food into the afferent end.

How to Perform the Bottini Operation on the Hypertrophied Prostate.

Bransford Lewis (*International Journal of Surgery*, No. 10, 1899) furnishes an article which, from the practical standpoint, is worth more to the young surgeon than any amount of theorizing or any number of statistics on the subject. In all the reports of Bottini cases there never appears a detailed description of the steps in the operation. As a result, the young man who has never seen the method carried out, has, so to speak, his hands tied, though, perhaps, in charge of a case which he desires to benefit.

The man who has studied Lewis' paper is in a position to perform this rather delicate operation, so minutely is it described by one who has repeatedly done it, and who has, to the reviewer's personal knowledge, had success in its use.

BARTLETT.

BOOK REVIEWS.

A Practical Treatise on Materia Medica and Therapeutics. By ROBERT BARTHOLOW, M.A., M.D., LL.D., Professor Emeritus of Materia Medica, General Therapeutics, and Hygiene, in the Jefferson Medical College of Philadelphia, Etc. Twelfth Edition, Revised and Enlarged. Price, Cloth, \$5.00. [D. Appleton & Co., New York.]

The popularity of this well-known work among teachers and students is shown by the rapid exhaustion of each successive edition. Since its first appearance in 1876 it has been widely and cordially received by the medical profession, and has been revised and enlarged with new matter each time a new edition was put forth. This, the tenth edition, well meets the requirements of the practitioner as well as the student. An article on prescription writing has been added, which is clear, succinct and helpful. The newer remedies are described and the author has, we think, not been too conservative in his selection. So many synthetical remedies are clamoring for admission into the list of recognized drugs that the careful discrimination shown is a matter of congratulation.

The same careful work on the text which has characterized previous editions is manifest in this one. The chapter on aliment, which was a valuable feature, has been improved by new material until it affords a very complete exposition of the present knowledge on that important subject.

The index of remedies and diseases is so carefully prepared as to enable the reader to find readily what he may be seeking.

The name of D. Appleton & Co. is a guarantee of excellent press-work, and this edition leaves nothing to be desired in the way of paper, type and binding.

BLISS.

Wm. Wood & Co., Publishers (New York), announce the publication of a new book entitled "The Treatment of Diseases of the Nervous System: A Manual for Practitioners," by JOSEPH COLLINS, M.D. Professor of Nervous and Mental Diseases in the New York Post-Graduate Medical School; Visiting Physician to the New York City Hospital. In this book, where reference is made to certain ther-

apeutic agents and appliances, care has been taken to explain at length the methods of their application, in order to meet the requirements of the general practitioner, for whom the work has been primarily prepared.

No attempt at classification has been made. The subjects have been taken up one after another in the following order, which is practical if not logical: Diseases of the brain, of the spinal cord, of the peripheral nerves, of the sympathetic nervous system, and, finally, the functional nervous diseases, and the most common symptomatic manifestations, such as headache, delirium, convulsions, hemiplegia, and insomnia.

Great stress has been laid upon the discussion of headache, neurasthenia, and other functional and symptomatic states in contrast to that devoted to brain tumors, multiple sclerosis, and other organic diseases.

Octavo, 616 pages, illustrated with engravings in line and half-tone. Extra muslin binding. Price, \$5.00 net.

NOTES AND ITEMS.

The Thirteenth International Congress of Medicine will meet at Paris, France, August 2, 1900, and continue in session one week. Its object is exclusively of a scientific nature. Membership will be granted:

1. To all doctors of medicine who apply for membership. They may become members by making the proper application and paying five dollars. The Secretary General in Paris has instructed the American National Committee to receive the applications of American physicians and to return a receipt for the amount sent. Upon application a blank form will be sent upon which is to be written full name and address, degrees, and any position of note held, together with the section of the Congress to which the writer wishes to belong. These applications and the money are then to be forwarded to Paris, and in due time cards of admission to the Congress will be distributed to all subscribers. This card will be required for admittance, and to secure for the members the advantages reserved for them.

Of the American National Committee Dr. William Osler, of Baltimore, Md., is Chairman, and Dr. Henry Barton Jacobs, 3 W. Franklin Street, Baltimore, Md., is Secretary.

Among other advantages, members will be entitled to receive a digest of the proceedings of the Congress, and the printed report of the Section to which the member belongs.

In forwarding payment to the treasurer, members should put their name, profession, and address plainly and legibly, and subjoin their visiting card.

2. To the representatives of science who shall be presented by the French Executive Committee or by the Foreign National Committee.

The Congress will be divided into the following sections:

I. BIOLOGICAL SCIENCES.

1. Descriptive and Comparative Anatomy. 2. Histology, Embryology, and Teratology. 3. Physiology, Biological Physics, and Chemistry.

II. MEDICAL SCIENCES.

1. General Pathology and Experimental Pathology. 2. Bacteriology, Parasitology. 3. Pathological Anatomy. 4. Internal Pathology. 5. Hygiene and Medical Pathology of Infancy. 6. Therapeutics and Pharmacology. 7. Neuropathology. 8. Psychiatry. 9. Dermatology and Syphilography.

III. SURGICAL SCIENCES.

1. General Surgery. 2. Surgery of Infancy. 3. Urinary Surgery. 4. Ophthalmology. 5. Laryngology, Rhinology. 6. Otology. 7. Stomatology.

IV. OBSTETRICS AND GYNECOLOGY.

1. Obstetrics. 2. Gynecology.

V. PUBLIC MEDICINE.

1. Legal Medicine. 2. Military Medicine and Surgery, Naval Medicine, Colonial Medicine

The addresses delivered at the general assemblies and the papers read before the Sections will be published in the record of the proceedings of the Congress; respecting the miscellaneous communications and the discussions the Executive Committee reserves full right of discrimination. Each communication will be limited as to time to fifteen minutes, and the speakers who take part in the discussions will be allowed five minutes.

The French language is adopted as the official language by the Congress in all international relations. In the general assemblies, likewise in the sectional meetings, the German, English, and French languages may be employed.

Members desiring to present papers are requested to forward the

title and a résumé of the same before May 1, 1900, to the Secretary of the section to which they belong, for each sectional committee reserves to itself the right of drawing up its own working programme.

The Committee hopes that many applicants for membership will be received from the physicians of this country, as it is extremely desirable that the American profession have a full representation in the international meeting of 1900.

They would urge every member of the profession to enter his name for membership, this alone entitling him to receive a digest of the full proceedings of the Congress and the printed report of the section to which he belongs. (Communications respecting the delivery of these reports to members to be addressed to M. Masson, publisher of the proceedings of the Congress, 120 Boulevard St-Germain, Paris).

We believe that the request will be accepted and many American physicians will become members of the Thirteenth International Congress of Medicine.

Medical Practice in Italy.—It is reported that the Italian prime minister has promised a deputation of native physicians that he will introduce in the session of parliament, which has just begun, a bill to prohibit practice, even among their own countrymen, by medical men who do not hold Italian degrees, unless the country of their qualification concedes reciprocal rights of practice to Italian graduates. This is, on the face of it, a perfectly fair proposal of reciprocity, but it is one which it would hardly be to the interests of any Italians, barring the physicians, to carry into effect. One of the chief sources of Italy's income is the money spent by English and American visitors, and the number of these would be very materially reduced if they were unable to secure the services of an English-speaking physician in case of illness. The Italian parliament will not be likely to adopt such a penny-wise pound foolish policy.

The Emmaus Colony for Epileptics and Feeble Minded.—The utility of the colony management of epileptics is being daily demonstrated. The Craig colony for Epileptics in New York is a notable example of the benefits derived in this ailment from an open-air existence with sufficient exercise to keep the body functions in a healthy condition, such as may be obtained from moderate physical labor.

Something over seven years ago the German Evangelical Synod of North America established near Marthasville, Mo., the Emmaus Asylum for Epileptics and Feeble-Minded, which was one of the first of its kind in America. The demands for accommodations in this in-

stitution having outgrown its possibility to meet them, a farm of one hundred and ten acres has been purchased on the outskirts of St. Charles, Mo., where a colony for epileptics will be established as soon as the necessary buildings can be erected. The buildings will be arranged on the cottage plan and the general arrangement is to be modeled after that of the Asylum Bethel at Bielefeld, Germany. Dr. W. Alexander, of Marthasville, Mo., will be the physician in charge of the colony.

The benefits derived from the treatment of epileptics and feeble-minded in this manner are excellent and the profession gives its hearty approval to the establishment of such institutions.

Excursions for Medical Study are organized every summer in France to acquaint physicians with the watering places, springs, etc., of that country. Half-fare railroad rates are given to the profession and the expense of the trip is 200 francs per capita, or about \$40 for a trip of eleven days, hotels, etc., included.

This is an excellent scheme for the purpose for which it is intended, but an improvement on the above plan, according to American ideas of the eternal fitness of things, would be for the enterprising hotel managers at the various health resorts, watering places, springs, etc., and the hustling passenger agents of popular railway, steamboat and steamship lines to co-operate and arrange for excursions for a limited period to the various medicinal springs on their routes which should be free of all expense to the medical profession. This would be of benefit not only to the physicians but to an equal degree to the hotels and transportation companies in thus securing the commendation of the profession. We throw out this as a suggestion to those interested, hoping that it may take root in fertile soil and reach fruition ere we are compelled to take a rest from our present arduous duties during the summer months.

Physicians Classed as Liquor Dealers. — According to the lay press the Internal Revenue Bureau has decided that a physician or a druggist who prescribes for his patients, whisky, brandy, wine or any other alcoholic liquor that is not compounded into a medicine by the admixture of any drug or medicinal ingredient therewith is required to pay a special tax as a retail liquor dealer, even though the alcoholic liquor thus furnished be prescribed as a medicine only, and so used.

This ruling is both unnecessary and unjust, and one, we trust, that can not be enforced.

More Medical Officers in the United States Army.—Surgeon-General Sternberg has prepared a bill for presentation to Congress providing for an increase of men in the Medical Department of the Army. This increase is necessitated by the expansion in the military organization. The bill provides for an addition to the present corps of four assistant surgeon-generals with the rank of colonel; ten deputy surgeon-generals with the rank of lieutenant-colonel; thirty surgeons with the rank of major; and eighty assistant-surgeons with the rank of lieutenant, who will have the rank of captain at the expiration of five years' service. These positions are to be filled by seniority promotion in accordance with the established laws and regulations. Acting assistant-surgeons to the number authorized are to be appointed subject to the usual examination for a probationary period of six months, during which time they will attend the Army Medical School in Washington. At the end of this time if their standing is satisfactory they will be commissioned to fill existing vacancies.

The Czar's Physicians.—A French journal states that there are no fewer than twenty five medical men attached to the Russian Court. There is first a Physician-in-Chief, then comes the physicians-in-ordinary and the honorary physicians. The surgeons-in-ordinary number three, and there are four honorary surgeons. Of ophthalmologists there are two, and other specialists abound in proportion. The Czarina has a physician, a surgeon, and three specialists. In addition to this goodly array there are a chiropodist-in-ordinary and an honorary chiropodist. The cynical may find here a satisfactory explanation of the alleged wretched health of this poor man.

Purification of Sewage.—A separate report of the purification of the sewage of cities and towns in Massachusetts has been made by the State Board of Health, to be embodied in the annual report which is now being printed. It appears that at the present time work for the purification of sewage by filtration, based largely upon the experiments at Lawrence, Mass., are in operation in fourteen towns and cities of the State, varying in population from 600 to 35,000, and also in many large public and semi-public institutions. The results obtained have been highly satisfactory, the general method in use being the application of sewage intermittently to areas of prepared beds of sand or gravel, about 5 feet in depth.

ST. LOUIS

COURIER OF MEDICINE.

VOL. XXII.

FEBRUARY, 1900.

No. 2.

ORIGINAL CONTRIBUTIONS.

The Increasing Frequency of Malignant Disease.

By JOSEPH D. BRYANT, M.D.,

NEW YORK CITY.

Read at the Fifteenth Annual Meeting of the Fifth District Branch of the New York State Medical Association, held in Brooklyn, May 23, 1899.

MUCH indeed is being said, and wisely at this time, regarding the nature and causes of malignant disease.

Patient and exhaustive scientific research are being directed to the solution of the character of the hidden forces that beget malignant manifestations. And here, as elsewhere in the field of investigation, common human interest and anticipation do not lag in their concern for the outcome. And whether or not in the establishment of the course of malignant vitality the successful investigator will bring to light a new organism or reveal to us the phenomena of life itself, are matters of profound conjecture. Whether or not perverted vitality or the existence of a special organism lies at the bottom of malignant development, are among the important questions of the hour.

It is not strange that intelligent human concern is strongly evident in these matters, for the physical and mental suffering attendant on progressive malignant disease permits of but lit-

the healthful amelioration and of no complete exemption. The hope and good cheer that attend other forms of human infliction, even to the finish, desert the sufferer from malignant ills almost at the outset. The human dread of malignancy and the fear of its presence cause intelligent adults to shrink from a knowledge of the truth, as do timid children shrink from fear of the mysteries of a darkened room.

It seems not unwise to pause and inquire as to the outlook in this regard, to take an account of the facts bearing on the relation of the increase and the prospective outlook of malignancy, as compared with the potency of the efforts directed to its prevention and cure. A course of this kind enables one not only to estimate the difficulty of the task of combating, but also of computing the prospects of success along the present lines of action.

In 1894 the reader called attention to the increase of malignant disease in several of the cities of this and of the old world. It was then shown that the mortality record in London from cancer alone had increased 0.85 per cent. in ten years. In 1889 the Registrar General of England, after careful exclusion of confusing elements, expressed the decided opinion that "A real increase is taking place in the frequency of these malignant manifestations." The increase in London has been continuous during the last five years, but not as rapid as during the preceding ten. In Berlin, in 1892, cancer and tumors caused 3.48 per cent. of the total deaths for that year. During the next six years the increase was gradual and pronounced, reaching 5.20 per cent. of the total deaths, being an increase of more than $1\frac{3}{4}$ per cent. in this brief period.

In Vienna, in 1881, cancer was accountable for 3.73 per cent. of the total deaths, and in 1890 for 4.96 per cent. During the last five years "cancer and tumors" have caused an increase in the death rate of 0.84 per cent.

In Paris, in 1893, we find cancer accountable for 4.61 per cent. of the total deaths, and in 1897 for 5.78 per cent., an increase of 1.17 per cent. In Munich, in 1892, for 3.98 per cent., and in 1898 for 5.60 per cent., being an increase of 1.62 per cent. Hamburg, too, shows a marked increase in this respect during the last few years. In Ireland, in 1878, cancer caused

1.92 per cent. of the total death rate; in 1897 it caused 3.14 per cent. of the same rate. Thus, in twenty years, an increase of over 60 per cent. took place.

Since human considerations teach us that "charity begins at home," I will call your attention now to New York and other important American cities. The average death rate from cancer in New York City for the ten years preceding 1894 was 2.17 per cent. of the total mortality. For the five years since 1893 the average death rate is 3.57 per cent. of the total mortality, showing an increase of 1.40 per cent. over the preceding ten years. During 1898, 1,260 persons died of cancer in New York City, give a death rate of 62 per 1,000 of the population. In New York State, in 1898, there were reported 4,456 deaths from cancer and 12,552 deaths from consumption, showing an apparent increase in cancer of 2,093 deaths, and in consumption of but 943 deaths over those reported in the year 1897. Surely these figures represent a most alarming state of affairs, since it appears that deaths from cancer have nearly doubled in a year. It is evident at once that this increase can not be accounted for by improvement in diagnostic means, nor by the presence of foreign cases for operative purposes, but must be regarded as a true expression of the facts of 1898 until a source of error is determined.

A scrutiny of the tables of mortality rates of the State and country shows cancer as a human infliction that is steadily progressive in its course. Based on these facts, Park made at the meeting of the State Medical Society (1899) the following startling prophesy: "If for the next ten years the relative death rates are maintained, we shall find that in 1909 there will be more deaths in New York from cancer than from consumption, small-pox, and typhoid fever combined."

Since New York City and Chicago are associated so often in matters of commercial and other contention, it may not be amiss to note their relative status in the field of cancerous endowment. In 1879, in Chicago, 2.05 per cent. of the total number of deaths were due to cancer. In 1889, 2.24 per cent. were due to a similar cause. In 1898, 3.92 per cent. was the reported rate. Thus the gradual increase is readily noted, and it is the exception when a succeeding year registers less of the infliction than its predecessor.

The average rate of mortality from cancer in Philadelphia during the last five years is about 0.06 per cent. greater than in New York City. Snow, in his succinct and expressive book on "Cancerous and Other Tumors," makes this statement: "Cancer is essentially a disease of civilization. It is almost unknown among savages. It is daily becoming more rife among all those races which are the nineteenth century products of social evolution."

The average death rate in Boston from cancer from 1889 to 1893 inclusive is 2.95 per cent. of the total rate. The same rate for the last five years is 3.45 per cent., showing an increase of 0.50 per cent. per annum during this time.

The average death rate from cancer in San Francisco from 1889 to 1893 inclusive was 3.57 per cent. of the total rate, but during the last five years the average has been 5.05 per cent. of the total rate, being an increase of 1.48 per cent.

Not a little of this astonishing increase can be justly attributed to the better means of diagnosis of later years, and principally, no doubt, to the larger number of cases that seek surgical relief there from an extensive surrounding country. A more careful examination into the causes might reveal the presence of a special localized determining influence relating to the development. I am not certain that it might not disclose errors in compilation in many instances.

Baltimore and New Orleans have each experienced an increase during similar periods of time, viz.: 0.29 and 0.31 per cent. respectively.

It is quite superfluous, indeed, to proceed further along this line of inquiry, as there can be no doubt of the fact that a steady and decided increase of malignant disease is taking place in all civilized countries. Moreover, there is but little reason for doubt that the extent of the infliction is measured by the civilized status of its people. While a minuter and profounder examination of the subject would emphasize the truthfulness of the foregoing facts, this course is omitted in order that the simple self-evident propositions shall not be needlessly obscured by a multiplicity of statement.

Newsholm contends that the increase is not a real but an apparent one, dependent on more accurate means of diagnosis

and more careful ascertainment of the causes of death. He regards the facts of the greater comparative increase of cancer in males and of the comparatively more frequent internal manifestations in this sex, coupled with improved diagnosis and more frequent autopsy, especially in hospitals, as substantiating his contention. In any event, the fact yet remains that cancer is one of the most pronounced in character of the fatal inflictions of a civilized people, causing a death rate in those above 45 years of age of 5 and 6 per cent. in some comprehensive instances.

The fact that an advance of the death rate from malignancy is now conclusively established, and, too, notwithstanding the improved means of surgical treatment, should lead us to inquire what can be done to arrest its progress. The discovery of the nature of the disease and the laws controlling its development, coupled with the knowledge of the means of its defeat, offer the only practical relief from its infections. The other scourges of the human family, as tuberculosis, cholera, plague, etc., and the various forms of fever, are now held either well in hand or are on the eve of a successful issue. Sure it is that operative treatment can do little more than is now accomplished in comparatively isolated instances. A completer realization of the potency of thorough ablation of the disease, aided by earlier opportunity and prompter action, will afford a still brighter outlook, but will not, I believe, fully arrest the increasing advance.

The steady increase that characterizes the relation of malignant disease to the people is not apparent in its attacks on the individual parts of the body. The frequency of attacks of different parts of the body is changing; those parts formerly characterized by frequent malignant visitations are now less often afflicted, while those formerly quite exempted are now suffering more frequently than before from malignant visitations.

Dr. Billings pointed out some time ago that a careful examination of the records of malignant disease exhibited the fact that the increase had been comparatively slight in the commonest seats of malignant disease, the generative and mammary organs of women, but had been largest in both

sexes in the digestive and urinary systems, and notably in the intestines, rectum, liver, and urinary bladder. Men suffer now more frequently than formerly from chancre of the mouth, the tongue, the pharynx, and the fauces, but women suffer less frequently from cancer of these parts.

About five years ago the reader, in the discussion on malignant disease held at a meeting of the State Medical Association, in commenting on the relations of sex and age to the organ afflicted, said substantially: "It will be noticed that those parts of the body which have special physiological significance and which are exposed to the pseudo-traumatism incident to perverted appetite and mischievous customs, are foremost in the field of malignant activity." The tongue, esophagus, stomach, intestines, rectum, uterus, and the female breast were cited as apt illustrations of the fact; but that those organs that are exposed to direct external deleterious influences, irrespective of their physiological importance, suffer in a minor degree. The lungs and the larynx were cited as instances of this fact.

Inasmuch as the middle period of life (45 to 55) is characterized by quite as much malignancy as all of the remaining periods combined, and inasmuch as the tissues are more responsive to external influences in the earlier period (before 45), and since the major part of the earlier period (to 35) offers but comparatively few examples of cancer malignancy, it seems reasonable to assume that this malignancy rarely, indeed, can have had its inception from a direct contact with a similar agency.

The examination of the records of 1,000 deaths from cancer in this city with reference to the ages of the deceased, shows that the first 45 years of life gave 277 deaths from cancer, and that the next 20 years gave 507 deaths, which were as equally divided as could be (253-254) between the ten-year terms of the latter period. Surely the first 45 years of life constitute the period of greatest vulnerability, greatest activity, and of exposure, and it would seem, indeed, that if cancer gains its foothold in the human economy through the potency of a special infection, cancer ought to predominate at the period of life when the conditions are most inviting, the same as do diseases of established infective nature.

It might be said, perhaps, that the inception of the disease happens during the earlier and more receptive period of life, and that it reveals its presence only during the latter period. Certainty, if this be true, the nature of malignant infection is changed or made comparatively inoperative by its newly-found association, for, from the time that its first effects came to our notice in established instances, it acts to the end with a vigor characterized by promptness and perseverance.

It seems to me that the foregoing facts are opposed to a belief in the parasitic origin of this disease. However, as it is no part of my intention to trench particularly upon this field of the topic, I will, therefore, pass at once from the province of speculation to that of practical outcome—the treatment of the disease.

There can be no well-founded gainsay of the fact that at the present time thorough operative practice offers the best means of relief. And I regard it to be equally true that operative practice, at least so far as the female breast is concerned, can accomplish but little more than has been done, without increased opportunity of action on the part of all surgeons, and of improved surgical technique on the part of the many. If it be necessary at this period of experience to contend for prompt, wide and extended removal of local malignancy, together with its approachable lymphatic associations, whether infected or not, then, indeed, from the surgical standpoint of surgical endeavor, the contest is a hopeless one, and is made so quite as much by professional ignorance, timidity or complacency as by the inherent nature of the affliction.

If the fact that in 1870 Sir James Paget uttered the following: "I am not aware of a single clear instance of recovery, of such recovery, that is, that the patient should live for more than ten years free from disease," has no importance as an earnest of the operative status of thirty years ago as compared with the results of that of later years, then, indeed, at once is the contest made hopeless, and by seeming human incredulity or perverseness. In 1880, therefore, as soon after Paget's statement as practicable, Gross showed that improved methods of practice had carried 9.05 per cent. of the cases safely beyond the ten year period of Paget. With still better technique

Gross showed in 1885 a percentage of 11.83 of cures with a death rate of 14 per cent. from the operation. In 1884 Bull reported +26 per cent. cure, based on a three year limit. Later, Halstead reports 53 per cent. of cures based on the same time limit. Watson-Cheyne still later, and, finally, Butlin, reports a percentage of cures even greater than Halstead's. The death rate from the operation is but 2 or 3 per cent.

Increased opportunity for all surgeons must be construed to mean the opportunity for the exercise of prompter action. The importance of increased opportunity is well shown by the investigations of Gross. Gross analyzed 136 cases of amputation of the breast for carcinoma in which recurrence took place. In 43 of these cases the lymph nodes were not apparently involved at the time of operation; the average duration of life in these cases from the recognized beginning of the disease was 52.7 months. In the remaining 93 cases in which the glands were involved at the time of operation, the average duration of life was only 39.3 months from the first appearance of the disease, an average difference of more than a year.

According to Winiwarter axillary gland involvement takes place on the average in fifteen months after the appearance of the disease in the breast. Gross regarded it quite certain that axillary infection happens in a fourth of the cases within six months of the inception of the disease. It is proper to say at this time that the preceding statements were based largely on the results of manipulative examination, and not on operative exploration fortified by subsequent microscopical scrutiny.

The truth is, gentlemen, that no one can state positively the exact time of nodular involvement, after primary infection. The promptness of the secondary invasion depends on many factors—such as the function of the part, its degree of vascularity, the condition of the patient, etc. In fact, this period can not be determined with a degree of exactness consistent with the security of the patient. Manipulative examination is unreliable, deceptive, misleading and should not be practiced as a determining, but rather as a contributing measure. Lymphatic glands always become infected before they are appreciably enlarged, and often are extensively diseased without significant increase in size.

The surgeon who fails to invade the axilla in operation for mammary cancer, only because no glandular enlargement can there be found by manipulation, is as grossly negligent of the patient's safety as of his neighbor's when silent in the presence of avoidable disasters. The reader recalls an instance of his own in which a mammary cancer the size of a walnut and of two months recognized presence, was attended by numerous markedly infected axillary glands not appreciable on palpation. The fact of the infection and the extent was determined by the microscope.

It may not be amiss in this connection to remind you that Gross determined that when the axillary glands were infected, the supra-scapular were similarly involved in 62.5 per cent. of the cases. Increased opportunity means also prompter action on the part of all concerned. Prompter action on the part of the patient, who should, on detection of a tumor, consult competent authority at once. Prompter action on the part of the surgeon, who should operate at once when the diagnosis is made, and even more, should establish the diagnosis by free incision in doubtful cases.

In other words, the fact of the discovery of a tumor in the human economy demands that a prompt diagnosis of its exact nature be made, not alone in the interest of a scientific result, but emphatically so in recognition of the instinct that begets the sentiment of human brotherhood. Too frequently, however indifference to one's self, personal vanity and dread of unpleasant tidings, delay the acknowledgment of the presence of a tumor, and too often, indeed complacency, sickly sentiment and inexcusable ignorance lead to professional delay of proper treatment; in fact, hesitation and delay characterize every action of significance except that of the development of the tumor itself. Prompt discovery and acknowledgment of the presence of a tumor, prompt and proper advice as to treatment, prompt, wide and complete removal of the initial growth and of its actual and prospective seats of infection, frequent and careful examination to detect the first evidence of re-appearance, followed by similar action as before, should characterize the local treatment of malignancy.

The education of the young and old to disclose apparent

and real infirmities to their physicians, rather than to keep the knowledge with a retentive grasp that destroys the chances of recovery, should be regarded a duty akin to that of religious instruction; and not until some such policy of action is well instilled into the minds of the inflicted and their friends, and not a few physicians as well, will the general prognosis of operative treatment further improve.

[54 West 36th Street.]

Studies on Lactoserum and on Other Cell-Sera.

By C. FISCH, PH.D., M.D.,

ST. LOUIS, MO.

Read before the Medical Society of City Hospital Alumni, January 18, 1900.

THANKS to the genius of Ehrlich our knowledge on the interaction of the blood and tissues of different animals on each other has not only considerably increased, but also greatly deepened during the last few years. His theory of the protoplasmic lateral chains (Seitenketten), while conceived to explain the hitherto so mysterious formation of anti-toxin, has already been incontestably established by direct experimental evidence. But, besides this, it has proved of such an eminent heuristic value, that by it vast new fields of research and experimentation have been opened which bid fair to enormously widen our insight into the working of organic life. As an instance, let me only mention the conclusion, that logically must be derived from Ehrlich's work, that all of the various protective means, by which the animal organism tries to defend itself against the introduction of obnoxious substances, are nothing but modifications of the ordinary process of fermentative digestion.

After Ehrlich¹ had shown that the bactericidal action of specific sera was due to the activity of a ferment brought into contact with the bacteria by means of specific substances, the immune bodies (Seitenketten), he extended the same way of

experimenting and reasoning to the globulicidal action of normal and specific sera. Expressed in a few words, it was found that the peculiar property of the serum of an animal to dissolve the red blood-cells of another animal after the first one has been treated for some time by injections of the blood of the latter, is brought about by two factors—a specific immune body, and a substance acting as a ferment. The heterologous blood-cells, when introduced into the serum-furnishing animal, exert an influence on certain tissue-cells of this animal, which results in a stimulation of the production of these tissue-cells of peculiar substances which are called immune bodies. Differently said, this would mean that some molecular group of the blood-cells combines with a corresponding group of the tissue-cell protoplasm, thus disturbing the physiologic entity of the latter. Like in all similar processes, this leads to an attempt at restitution, and, as in any restitution, to a hyperproduction of the blood-cell-binding group or the lateral chain. The hyperproduced lateral chains are detached from the cell-protoplasm and appear in the blood of the injected animal as immune body. On the other side, these protoplasmic groups of the tissue-cells (or when detached the immune body or Seitenketten) possess a peculiar affinity for certain ferments present in the body fluids, in fact they are the links by which the action of these ferments is transferred to the protoplasm. The immune body, therefore, which is produced in one animal by the injection of the red blood-cells of another animal must be found in the blood serum; here it meets with ferment-molecules and combines with them, and is now prepared whenever the chance offers, that means whenever red blood-cells of the second animal come in contact with the serum, to transfer the ferment action to them. The specific immune body has two haptophorous groups, one with an affinity to the ferment, another with a specific affinity for the red blood-cells used for ingestion. This is, in a rough sketch, the process leading to the production of a specific globulicidal serum. Let us put for the words “red blood-cells” the word “bacterium” and we arrive at a “bactericidal” serum. The phenomena in both cases are so much alike that we are justified in continuing the use of terms which were originally employed only in regard to

the relations of the organism to pathogenic microbes; I shall use in the following disquisition the word "immunizing" for "treating by injection or otherwise with some particular substance," and the words immune body" for "specific substance produced by such treatment."

It was a further and very important privilege for Ehrlich to be able to show that what here obtains for artificially produced specific sera obtains too in exactly the same manner for the natural globulicidal action which certain normal sera exert on the red blood-cells of certain animals. His researches have been corroborated by a number of observers, among whom I only mention Bordet,² von Dungern,³ and others, although none of them has been so clear and convincing in their demonstration of the merely *chemical* nature of the phenomena mentioned. I must add here that these specific sera, besides being globulicidal, are exceedingly toxic for the animals whose erythrocytes they specifically destroy. I also shall briefly point to the fact, that not only the red blood-cells, but almost any kind of specifically differentiated body-cells can be utilized for the preparation of immune bodies or of specific immune sera, among which I simply mention spermatozoa, epithelial cells, leucocytes, etc. About the anti-macrophagic or anti-leucocytic sera of Metschnikoff⁴ the newspapers of late have brought a multitude of undigested and nonsensical communications.

In a paper on the mechanism of agglutination, in March of last year, Bordet⁵ asserted, that a serum could be prepared by injections of milk into animals, which, when mixed with milk, caused the casein to be precipitated. Bordet comprised this phenomenon under the head of agglutination, accounting for it by the supposition of changes in the molecular attraction between the molecules of the specific serum and the caseine molecules. Be this as it may. He omitted, however, altogether to account for that factor which brought about the chemical alteration of the casein molecule resulting in its precipitation and afterwards in its agglutination. Since by normal serum of most animals any kind of milk is left absolutely unaltered, in the milk-immune-serum changes must have taken place which are either of a grossly chemical nature or consist in the formation of specific enzymotic substances, or lastly, in the formation of

immune bodies combining the naturally-present ferments with casein molecules. A closer study of these phenomena seemed to be very desirable and to it I devoted part of my last years' work, about which I am to report now.

The correctness of Bordet's description of the properties of the lactoserum is easily confirmed. It is only necessary to inject into the peritoneum of a rabbit in successively increasing doses some cubic centimeters of milk, to find after a while, that its serum has acquired the specific quality. For my experiments I employed altogether rabbits and guinea-pigs, and the milk used was prepared in the following way: Perfectly fresh milk was centrifugated and separated from the cream, then filtered through a paper filter and with the addition of toluol preserved. It can be kept in this way unaltered for a long time, especially well in an icebox. Before injecting the milk it was put for several hours in the incubator to evaporate the last traces of toluol. I found this method better than that advised by Bordet, who heated the milk to 65° C., before injecting it.

The normal serum of rabbits and guinea-pigs does not, when added to milk, exert any action on it. Normal cows' serum now and then has a slight coagulating energy. If cows' milk, in certain intervals and in increasing doses (beginning with 1 c.c. and rising up to 30 and 40 c.c.), is injected into the peritoneum of these animals, the period of immunization lasting two to three months, their serum has acquired the quality of precipitating the casein of milk. The energy of this quality varies according to the degree of immunization and to the individuality of the single animals. If, in a test-tube, some milk (for this purpose milk that has been filtered several times is used to the best advantage) is mixed with a small quantity of the serum of such an animal, after ten to twenty seconds the formation of small flocculi is observed, which in a few minutes settle to the bottom of the tube, leaving the supernatant fluid clear or opalescent. If the amounts of milk and serum are chosen in correct proportions, the addition of more serum remains ineffectual. In my animals the proportion of serum necessary to bring about a complete precipitation varied from 1:4 to 1:12. If too little serum is added, the filtrate of the mix-

ture gives a new deposit after the addition of more serum. In whey, prepared by coagulating milk by means of chymosin, the serum still produces a precipitate, acting on those traces of casein which the ferment has left in suspension or solution. This observation has also been made by Bordet.

If the *modus operandi* is changed so that instead of fresh milk boiled milk is used for immunization, the serum of these animals, even after prolonged treatment, is found to be inert and as ineffectual as normal serum.

That the process described merely and alone means a change of the soluble or suspended form of the casein into the insoluble form or into paracasein, is easily proven by the ordinary methods. The lactalbumin remains in solution, most likely the lactoglobulin also, although on this point I have not made any direct investigation. That the effect of the serum is not due to any change of reaction, need not be remarked; besides, other phenomena, to be related later, militate *ec ipso* against such a supposition. It is not merely the production of an enzyme that has taken place, at least of none similar to the rennet-ferment, as becomes apparent by the comparative inefficiency of the serum (1:10 at the best, while rennet-ferment acts at 1:3000000). A better insight into the phenomenon will be obtained after I have reported some more experiments made with this lactoserum.

In the first place, this serum behaves like any other specific serum, that means, its qualities can by subcutaneous injection be transmitted to another animal. Ten cubic centimeters of it administered to a fresh rabbit or guinea-pig imparts to its blood or serum a noticeable, although weak precipitative property. It does not matter in this experiment whether immune rabbits' blood be injected into fresh rabbits or into guinea-pigs, or *vice versa*. The effect is in both the same.

The lactoserum, when heated for half an hour to 55° or 60° C., loses its power to precipitate casein altogether. This is a very important point, inasmuch as it shows that some easily destructible substance is present in it, with which its specific activity is closely connected. If we remember that rennet ferment only after a *prolonged* exposure to 70° C., completely loses its activity, although the latter is interfered with and

weakened at temperatures lower than this, we might easily conclude that the specific energy of the lactoserum can not be due only to the destruction of this ferment. If it alone would be the causative agent, enough of it, we should suppose, ought to be left undestroyed after the heating process to assert its presence.

The problem in fact is more complicated. If, to a lactoserum inactivated by heat, some normal serum of the same species or even of another species is added (to rabbit serum there can be added for this purpose the serum of guinea-pigs and goats; the serum of horses is ineffectual), the same regains its activity and precipitates casein as before. We observe here, again, a phenomenon that is exhibited by bactericidal and globulicidal sera in general, and the before-quoted researches of Ehrlich give us the key to the problem. In other words, we are compelled to assume that the specific action of our serum also is the result of two factors working together, one contained and always present in normal serum, and another produced by the process of immunization in the serum of our animals. The latter we call with Ehrlich the specific immune body, the former simply and without prejudice the ferment. The immune body is resistant to heat, the ferment is destroyed; the latter can only act by intervention of the former.

Unfortunately, in this case, it is impossible to separate by mechanical means the micellar groups of casein molecules suspended in the milk from the rest of it in order to show the relative affinity of the three substances concerned for one another. At very low temperatures (1° to 5° C.), the precipitation does not take place, it begins to show up more quickly and completely as the temperature rises. This would give us an indication that we have to deal here merely with a chemical process. We have to imagine that the large casein micells contain one group of superior affinity to a group in the immune body, while in the latter there exists another haptophorus group binding the ferment molecule. The immune body, therefore, here too would act in the way of a tentacle, catching the isolated ferment molecules and bringing them in contact with the casein molecule or micell. Although experimentation at this point has to stop, I have brought enough evidence to prove

that the lactoserum owes its specific action to causes analogous to those acting in other specific sera, the task of which it is to destroy or digest cells (erythrocytes, bacteria), or larger protein molecules.

Before I make any more remarks on the enzyme acting in the lactoserum I have to refer to a number of other experiments made by me. The evidence so far was derived from animals immunized with cows' milk. Simultaneously with them I subjected other animals to injections with milk taken from other mammals. One series was treated with goats' milk, and a third one with breastmilk (human). The direct result was the same as in the experiments previously detailed. The relations of immune body and ferment were exactly the same. The goats' lactoserum precipitated goats' milk perfectly and the same did the human lactoserum with breastmilk. But the results were absolutely negative whenever one of these lactosera was brought to act on a heterologous milk. Cows' milk was not precipitated by goat's or human lactoserum, cows' lactoserum was inert with goats' and breastmilk and so on. Each of them behaved in an absolutely specific way and would only act with the homologous form of milk.

A further investigation of this surprising phenomenon led to the establishment of the fact that it was the immune body that presented this specificity. All three of the sera inactivated by heat could be re-activated by the addition equally of rabbits, goat, or guinea-pig serum, although it must be admitted that the amounts of normal serum necessary to obtain this effect seemed to be in a distinct way different, according to the kind of normal serum used. For bovine lactoserum the adequate amount of normal cows' serum was smaller than that of any other serum, etc. The immune body in each of the three specific sera was different from that of the others, while the ferments appeared as homologous, or, at least, as very nearly related substances.

If we consider for a moment the bearing of these findings we can come to no other conclusion, but that the immunizing substances in each of the three kinds of milk employed must be different, although not so different as not to be accessible to the action of one and the same ferment or of several fer-

ments, the constitution of which must be nearly identical. Each of these milks gave rise to the production of an absolutely specific compound, which had no affinity to anything in the world except to certain constituents of the milk of the same animal. Which are these immunizing substances?

The answer, of course, that first offers is, that they must be represented by the casein, or, since we have reason to surmise that the form of the casein, in which it is present in natural milk, is not that of simple casein molecules, but rather that of aggregates of such molecules of definite structure, perhaps in combination with other organic or inorganic substances, by the "caseinogen," if I may use the term in this altered sense. In regard to some other experiments, which I shall describe directly, I believe that this answer is correct. The original casein or "caseinogen" of the milk of every species of mammals is a specifically differentiated body, different and varying in its structure from that of every other species. It is, therefore, not only likely, but bound to react in a specific way when brought in contact with the protoplasm of another animal. Whether from this conclusion it would follow that the caseins of different species must act differently when precipitated and digested in the gastro-intestinal tract of heterologous animals, I can not prove; but from many observations extraneous to the subject under discussion I am inclined to assume this.

Is there any possibility of collecting direct evidence for the essential difference of the casein material of the milk of different species? I think that for one animal, at least, I have been able to furnish it in the following way:

If we inquire into the mode of secretion of milk by the cells of the glandular organs we find that it goes hand in hand with a breaking-down of epithelial elements, the detached and disintegrated ones being replaced continuously by a proliferation from the external layer. The detritus (including chromatin, protoplasm, etc.) is constantly evacuated with the milk, which, to our present knowledge, owes many of its characteristics to these katabolic products of the gland-cells; perhaps and most likely the essential elements of the milk are nothing but the altered and transformed constituents of those disintegrated glandular cells. Taking this for granted, the thought

appeared possible, that an immunization by means of these glandular cells might result in the production in the serum of the treated animals of substances resembling those found in the lactosermum. I had the opportunity to obtain the udder of a cow, which had been dry for two months and which died from tuberculosis; for the material I am indebted to Dr. Kammerer. As well as I could I dissected out a sufficient amount of gland tissue, avoiding the admixture of too much connective tissue, and reduced this mass in a pulverizer with the addition of a sufficient quantity of $\frac{9}{10}$ per cent. salt solution to a homogeneous emulsion. After the latter had been filtered through muslin, it was preserved with toluol and kept in the icebox. The fluid so obtained was used for intraperitoneal injections in rabbits in the way described in the former experiments. Under the microscope whole and broken-down cells and fibers were visible. The behavior of the latter after injection I shall describe later.

If, after a longer time of treatment in this way, the blood-serum of these animals was separated, and then examined by the addition of cows' milk it behaved altogether, although not so pronouncedly like lactosermum. The casein was precipitated in a proportion of 1:4 to 1:4.5 and the immune body did absolutely not show any difference from that of the lactosermum. Substituting, however, goats' milk or breastmilk, no reaction whatsoever was obtained. In this case, therefore, by the injection of a tissue, which for two months had not exerted its specific activity, and which, therefore, did not contain, in a finished form, any of its specific products, the same impression was made on the organism injected with it, as would have been produced by the milk itself. The specificity was here as well as in the milk experiments confined to the same species of animals.

Although this experiment was carried through only with the material derived from one animal, and that a diseased one, I feel perfectly sure that, had I been able to extend it to a larger series, the results would have been perfectly in agreement with those obtained. And so I dare to draw from it the inference, that my former proposition has been strengthened by it, viz.: that the caseins produced in the milks of different species have

a different molecular constitution. I will not omit, however, that starting from another way of questioning, von Dungern has arrived at similar results. More about this further on.

We may now return for a few moments to an inquiry into the nature of the ferment or addiment, as Ehrlich calls it, which in union with the immune body precipitates the milk casein. If we had to refuse the idea, that the reaction was only caused by the production of a ferment in the lactoserum, this was based on the knowledge, that without the immune body, this ferment was not able to act. Acting on a casual remark of Ehrlich and Morgenroth,⁷ a year ago, a remark which a few weeks since has found a beautiful explanation in an extensive paper of Morgenroth,⁸ I began to treat a few guinea-pigs with fresh glycerinic extracts of the stomach of calves and pigs—that means, with a fluid containing chymosin or rennet ferment. My experiments are so poor and incomplete in comparison with the fine work done by Morgenroth that I would not mention them here did they not serve to clinch the evidence which I am trying to adduce. Morgenroth has shown that in this way a quantitatively measurable anti-enzyme is produced, which in fixed amounts prevents the action of the enzyme. I can not too highly recommend the article of this author to all who are interested in the subject. Although I did my work in a rather rough and abrupt way, I succeeded, nevertheless, to obtain thus small quantities of a serum which distinctly inhibited the action of rennet or casein, and which, therefore, contained larger or smaller amounts of anti-chymosin.

And now, when I mixed to any kind of lactoserum a rather large dose of this anti-enzymotic serum and then added to this mixture a small quantity of cows' milk, less than would have been in the power of the lactoserum to precipitate, no precipitation occurred. It did not occur until, gradually, so much lacto-serum had been subsequently added, that the capacity of the antiferment serum was exhausted. The quantity of my material did not suffice to make any more definite determinations. But the experiments are conclusive enough to allow of the assertion, that the ferment acting by means of the immune body in the lactoserum is nothing but the common rennet or chymosin enzyme.

Why is it, that in the case of lactoserum the intervention of an immune body (a "Zwischenkoerper") becomes necessary? It is very difficult to find an answer to this question. But it seems to me that here, too, Ehrlich (*loc. cit.*) has given a hint in the true direction. We have to assume that minute quantities—scattered molecules, if I may say so, of all ferments are constantly present in all body fluids. That these quantities, under circumstances, may become larger than usually, seems to emanate from the observation of Morgenroth, that horse serum always contains anti-enzyme. It is owing to their sparsity and scarcity that they do not find a way to exert their energy. If, under artificial or pathologic conditions, as in our experiments, the exertion of the latter becomes desirable, the organism prepares specific organula to hunt for them and to bring them in contact with the substances, which, while foreign, are obnoxious; the organism forms tentacles, as it were, like the sundew (*Drosera*) does on a large scale. These tentacles hunt or catch and digest at the same time. The molecules of the immune body are nothing but such tentacles, catching the single ferment molecules by chemical affinity and also attaching themselves by chemical affinity together with the ferment to the digestible particle. The amount of ferment present in the lactoserum, as most likely in any normal serum, is infinitesimally small, as may be seen from the comparison of its efficacy with that of the "pure" ferment. It precipitates in a proportion of 1:10 at the best, while the latter is perfectly active in a proportion of 1:3000000. It is at least conceivable that the organism has adapted this method to secure the action of a ferment, which, at the place where it is needed, is present only in insufficient amounts, and which can not be procured at first call in larger amounts. Let it be said, too, that the real action of not a single ferment or enzyme is as yet known, and that beyond the fact that chemical energy is set in action, we know nothing.

As to the general behavior of the lactosera, I have very little to add. They lose, like other such sera, their activity very rapidly outside of the body, but they can always be re-activated by the admixture of some fresh normal serum, an observation that first was made by Pfeiffer on the anti-cholera serum. The transmissibility of their specific energy to fresh

animals by injection has already been touched upon. A phenomenon that was observed likewise in the preparation of other similar sera, in direct contradistinction to the antitoxic sera, is the peculiarity that in the period following an injection the height of the previously attained precipitating power does not decrease but goes on steadily increasing. Finally, I will say that the immunity of the injected animals is preserved for a long time; one of my rabbits, which for four months had no injection, still precipitates milk in about the same proportion in which this was done shortly after the last injection.

This concludes my experiments and observations on this form of specific sera. A few more words may be added on the so-called specific cell-sera, about which, since my investigations began, a number of publications have been made. We are especially indebted, besides Ehrlich and Bordet, to von Dungern, Metschnikoff, and Carbone,⁹ for our knowledge on these substances. They found that not only the treatment with the erythrocytes of a heterologous animal produced a serum, dissolving these cells and toxic to their possessor, but that other tissue elements, too, could be used with analogous results. As far as my knowledge goes, spermatozoa, tracheal epithelium, kidney- and liver-cells have been used for this purpose. The result is in all cases the peculiar property of the serum of the immunized animals to dissolve with considerable rapidity the cells used for the injections and only them, while serum of normal animals does not exert any action on them. Carbone claims that toxic properties mainly are observed.

My limited experience extends only to two forms of these sera. When I injected small quantities of the cows' udder-serum, described before, together with small amounts of an emulsion made from the scrapings of the mucous surface of the intestines of a freshly killed ox, into the peritoneal cavity of a guinea-pig, and then, after the method of Pfeiffer, by means of thin capillaries, removed small drops of the peritoneal exudate, I always found that the cells rapidly disintegrated and disappeared, while the injection of such an emulsion together with normal serum preserved them intact for a number of days. More extensive were my experiments on emulsions of kidney-cells; they are, however, not yet completed, and I can only say

that a comparatively high degree of specific immunity may be obtained in this way. Against von Dungern,¹⁰ however, I must remark that when the emulsions are made carefully without the admixture of blood, the action of these sera is absolutely specific and that, especially, I could not observe any globulicidal effects. Whence this course of experimentation will lead, nobody can foresee. It may not be amiss to insist that we are dealing here with a subject in its swaddling clothes, and that any practical applicability is not at all foreboded, as far as the experiments go. Metschnikoff's theories are based on absolutely wrong histopathologic interpretations, which says enough about the announcements made lately and emanating from Paris.

BIBLIOGRAPHY.

1. Berliner klinische Wochenschrift, 1899, Nos. 1 and 22.
2. Annales de l'institut Pasteur, 1899, No. 4.
3. Münchener medicinische Wochenschrift, 1899, Nos. 13 and 14.
4. Annales de l'institut Pasteur, 1899, No. 10.
5. Annales de l'institut Pasteur, 1899, No. 3.
6. Münchener medic. Wochenschr., 1899, No. 38, p. 1230.
7. Berliner klinische Wochenschrift, 1899, No. 1, p. 8.
8. Centralblatt für Bacteriologie, 1899, Nos. 11 and 12.
9. Münchener medicin. Wochenschr., 1899, No. 51, p. 1758.
10. While this paper is about to go to press, the Annales de l'institut Pasteur for January, 1900, brings an article on "Antispermatozoic Serum," by Metschnikoff, in which this author affirms this very same absolute specificity in the same way.

Virchow Jubilees.—A man whose life has been so full and so varied as Virchow's finds, after passing his three-score and ten, the jubilees crowding thick and fast. On November 25, 1899, the University of Würzburg celebrated the lapse of fifty years since Rudolph Virchow delivered his first lecture there. In the vestibule of the Pathological Institute was placed a bust of the great pathologist crowned with a wreath, and Prof. v. Rindfleisch delivered an oration in which he reviewed the development of the science of pathology during the half century, and dwelt upon Virchow's influence in that development.

Climate of Tucson, Arizona.

By A. W. OLCOTT, M.D.,

TUCSON, ARIZONA.

Read, by request by ELSWORTH F. SMITH, M.D., St. Louis, Mo., before the Medical Society of City Hospital Alumni, January 18, 1900.

TUCSON (latitude $32^{\circ} 14'$, elevation above the sea 2400 feet) is a city of 12,000 population, in Southern Arizona, and stands on the bank of an underground river, the Santa Cruz. Arizona is in the southern extremity of that great basin between the Rocky and Sierra Nevada Mountains that stretches from Canada into the State of Sonora, Mexico.

This basin, formerly called the Great American Desert, walled in by massive mountain chains on the east and west, is a constant succession of mountains, valleys and mesas (elevated plains). So frequent are the mountain chains that their tops may be taken for the level of the country, so far as the general air currents are concerned. From east to west through New Mexico, Arizona and parts of California and Texas, this basin extends and presents everywhere an arid waste, save where the valleys have been rendered fertile by man's efforts, and where mountains rise 5,000 feet above the sea, they are covered with forests of pine and oak.

The study of the temperature of this region shows that the same causes that render the Pacific Coast more equable and warmer than the Atlantic prevails, though to a less extent. Thus: Table I shows that Tucson has a semi-tropical climate, with mild winters and warm summers. The lowest temperature recorded in ten years was 16°F. above zero; the thermometer registered 32°F. or lower, thirty days in the year.

The days are warm and the nights are cool, with a daily range of temperature of about 30°F. This somewhat large daily range is found in all arid regions and is due to the cloudless sky and dry air which allows the sun to quickly warm the earth by day, while the heat is rapidly lost at night by radia-

tion. These changes are not so noticable as they would be in the moist atmosphere of the East.

TABLE I.

CHART OF THE TEMPERATURE OF TUCSON FROM THE YEAR 1892 TO THE YEAR 1897, INCLUSIVE.

Month.	A MEAN		B Monthly	C	C	Av. No. day- below 32 deg.
	Maximum.	Minimum.	Mean.	Highest.	Lowest.	
January. . .	65.7	35.3	50.2	89.4	18.	10
February. .	66.7	38.2	52.6	83.2	20.	8
March. . . .	72.6	41.2	56.4	94.1	21.6	3
April.	81.8	46.3	63.4	95.	30.	$2\frac{1}{2}$
May.	87.4	55.4	72.5	105.	38.	0
June.	98.3	63.9	80.3	110.	39.7	0
July.	98.1	75.	85.4	107.	63.	0
August. . . .	95.3	71.	83.2	107.	62.	0
September.	93.7	64.3	79.6	107.	46.	0
October. . .	83.8	57.9	69.5	97.	35.	0
November.	78.1	40.9	58.0	89.	28.	1
December.	65.	34.8	49.0	95.	16.	6
Year. . . . .	..	..	66.6	..	..	..

Average daily range for six years, 30.3 degrees.

The simple thermometer, no matter how accurate it may be, does not measure temperature as felt by animal life; its records must be considered in connection with certain other data in order to afford a mode of comparison with the climate of other portions of the earth. We may term the readings of an accurate thermometer, the actual, and the sensations of heat and cold as felt by the higher orders of animal life, the sensible temperature, neither of these is a measure of the other.

The fact is well known to meteorologist that the thermom-

eter alone can not indicate the sensible temperature but that the humidity of the air must be considered in connection with the actual temperature. This fact is also known to dwellers in the arid region, but it is not known to the majority of otherwise intelligent people throughout the world. The reputation of Arizona has long suffered from the prevalent ignorance on this point. Records of maximum temperature enable comparisons to be made which appear unfavorable to Arizona and lead to the belief that the heat of this so-called desert region must be almost, if not wholly, unendurable.

TABLE II.

MEAN MONTHLY TEMPERATURE FOR THE YEAR 1893.

Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
Jacksonville.....	49.2	61.6	60.6	72.6	75.3	80.	83.6	81.4	78.9	70.9	62.	69.6	69.6
New Orleans....	50.2	61.2	60.8	71.6	75.8	80.2	83.1	82.	79.8	69.1	60.3	69.4	69.4
Galveston.....	53.4	57.6	61.8	71.2	75.7	80.4	84.0	81.9	81.	7.2	63.7	70.3	70.3
Tucson.....	51.3	54.	56.	63.6	71.2	83.6	85.0	81.8	77.	65.5	54.0	66.1	66.1
Los Angeles....	57.2	55.	53.5	57.8	62.6	66.1	69.6	71.4	66.1	63.4	57.3	61.5	61.5
San Francisco ..	47.4	50.3	51.2	52.4	65.8	56.5	56.6	56.6	59.3	57.6	55.6	52.4	54.3
Denver.....	38.3	31.4	38.0	45.1	54.3	68.6	73.4	70.	63.4	51.4	39.0	38.2	50.9
St. Paul.....	3.2	9.1	23.0	39.0	53.8	71.4	73.4	69.	61.8	43.0	40.0	12.4	41.3
Chicago.....	12.	21.5	33.2	44.3	52.4	67.8	73.8	69.8	64.1	52.6	36.0	25.4	46.1
Albany.....	16.8	21.6	31.4	44.	58.4	70.5	72.	72.	59.2	53.7	38.7	25.7	47.0
Boston.....	20.7	26.8	33.8	44.4	56.3	64.8	71.4	69.6	60.	54.8	42.2	30.4	47.6
St. Louis.....	24.8	30.8	43.6	56.6	64.0	75.2	80.2	76.1	71.6	58.6	44.1	36.4	55.3

When the percentage of atmospheric moisture is high both extremes of temperature are felt to be greater than the thermometer indicates. Everybody knows something about that condition of the weather which is variously termed sultry, close or muggy; these terms describe the result of a combi-

nation of heat and moist air. This is the condition that exists commonly in the tropical regions of the world where the rainfall is heavy and in the same way, though to a smaller degree, throughout the United States outside of the arid region. It is especially noticeable in the states bordering on large bodies of water, such as the Gulf of Mexico and the Great Lakes, and is conspicuously absent from the greater portion of Arizona. In the dry air of this Territory sunstrokes are unknowns, while in the Mississippi Valley and the states lying eastward, whole columns of the newspapers are filled with accounts of prostrations from heat, and fatalities are numerous whenever the thermometer indicates 90° or upwards. At many places along the seashore where the humidity always remains near the point of saturation, a temperature of 85° brings excessive discomfort and exertion or exposure to the sun is extremely hazardous. Men and the lower animals perform in safety their customary duties beneath the cloudless skies of Arizona under the highest temperature ever experienced here. The dry air induces exceedingly rapid evaporation of the abundant perspiration, thus keeping the body at a comparatively low temperature.

As a matter of course the supply of fluid must be maintained, hence the great thirst so often experienced by travelers in desert regions, and the imperative necessity for an adequate supply of drinking water. Of all the lives lost on the desert stretches of Western America, and this number is not small, not one is attributable to heat, but to thirst. The experienced traveler provides an ample supply of water and fearlessly invades the worst desert yet discovered.

An amount ranging from 15° to perhaps 30° , according to humidity, should be subtracted from the record of maximum temperature during the hot season in Arizona to indicate the sensible temperature.

In like manner the dry air of the arid regions enables extremely low temperature to be endured without discomfort. The lowest temperature known on the high plateaus of Arizona brings less discomfort than a chilly day in New Orleans.

The rainfall is more varied and uncertain than any other element of climate. There are two rainy seasons—one com-

mences in July and extends into September; the other in December and January. The mean annual rainfall for 20 years is 11.63 inches. Over one-half of this falls from July to September, the rest is scattered over the remaining nine months, with a maximum in December or January.

TABLE III.

CHART OF RAINFALL OF TUCSON FOR THE YEARS 1892 TO 1897, INCLUSIVE.

Jan'y	Feb'y	Mar.	April	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.	Yearly Av'ge
0.79	0.74	0.61	0.05	0.17	0.05	1.75	2.73	0.99	1.34	.84	.56	10 62

The above figures are a mean average in inches
Average annual rainfall for twenty years, 11.63 inches.

The rainfall is almost directly proportioned to the altitude, thus:

Station.	Elevation.	Rainfall. Per Year.
	Feet.	Inches.
Yuma.	141	3.5
Phoenix.	1086	7.08
Tucson.	2400	11.63
Flagstaff.	6862	27.49

RELATIVE MOISTURE OF AIR.

Table IV compares the amount of aqueous vapor in the air of this and ten other stations. It shows that Tucson has the driest air of any city of its size in this country, and makes the most striking peculiarity of the climate and one that especially fits this place as a resort for persons suffering from bronchial and pulmonary troubles.

SUNSHINE.

The first thing that strikes the attention of the tourist in this country is the strength and constancy of the sunshine. To

one coming from the cloud-covered sky of the East the deep blue of our sky and the constant sunshine recurring day after day is a constant source of surprise and delight as well as of immense comfort to the invalid. There are not even three days a month in winter that can be classed as cloudy, and there is an average of 80 per cent. of possible sunshine for the year.

Table VI shows sunshine record for 1893.

TABLE IV.
PERCENTAGE OF RELATIVE HUMIDITY IN 1893.

Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
Jacksonville.....	66	80	72	72	74	78	74	81	82	78	82	81	77
New Orleans....	71	79	70	79	77	80	77	74	77	71	83	79	77
Galveston.....	79	91	83	89	84	83	78	78	80	70	83	86	82
Tucson.....	36	48	54	31	28	22	48	65	45	32	50	45	42
Los Angeles.....	69	73	79	71	75	75	77	77	77	73	74	63	74
San Francisco...	81	70	82	80	76	75	82	87	76	77	82	81	79
Denver.....	39	54	52	43	49	38	45	48	35	38	43	43	44
St. Paul.....	75	73	75	75	60	65	60	63	65	71	67	79	69
Chicago.....	88	84	80	77	74	74	72	66	66	71	76	83	76
Albany.....	84	85	78	71	73	74	71	74	79	79	79	81	77
Boston.....	71	73	71	69	73	83	66	75	77	73	69	74	73

Complete saturation is 100 per cent.

WINDS.

The protected position of Tucson, surrounded on every side by mountain ranges, shut off to a large extent the winds. As a consequence we have much less trouble with dust storms, so common and distressing in arid regions. The severe sand storms found in many parts of this country are unknown here.

Table VII gives the average rate of winds for each month of the years 1894 and 1895, with yearly average of 4.8 miles per hour. Cyclones and severe wind storms are unknown, and a velocity of 40 miles an hour is a rare occurrence.

Table V shows chart of rainfall of Tucson, with 11 other stations, as well as the number of rainy days in the year.

TABLE V.
PRECIPITATION IN 1893.*

Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
Jacksonville...	9 0.98	10 6.87	15 8.90	3 2.67	11 2.67	13 4.66	12 4.54	19 10.02	11 6.09	10 4.48	7 1.76	6 3.08	126 58.23
New Orleans.	7 2.50	10 4.92	9 3.49	2 3.70	2 2.66	13 5.30	12 3.72	12 4.56	11 4.38	6 4.24	9 6.24	4 2.31	102 48.02
Galveston.	7 0.54	14 1.99	6 0.88	7 5.70	9 2.98	8 7.45	8 2.96	11 5.02	3 1.72	1 0.55	13 3.92	7 1.72	94 35.43
Tucson...	2 0.27	4 0.82	6 1.16	0	3 0.75	0	12 2.78	12 5.40	4 1.02	0	2 0.43	1 0.49	46 13.12
Los Angeles.	7 6.29	5 2.27	12 8.52	1 0.19	1 0.06	1 0.03	0 0.00	0 0.00	0	4 0.75	3 0.20	6 3.65	40 21.96
San Francisco.	6 3.05	9 2.75	16 4.08	7 1.03	2 0.15	1 0.03	1 0.02	0 0.00	3 0.21	3 0.19	13 4.18	8 2.25	69 17.91
Denver...	2 0.05	8 0.83	4 0.23	0.87	9 3.09	2 0.13	8 1.14	6 0.35	2 0.05	4 0.84	6 0.55	7 0.35	63 8.48
St. Paul...	13 0.73	10 1.87	12 1.96	11 5.30	11 2.66	6 2.00	8 1.68	8 2.40	5 2.70	11 1.49	6 0.81	12 2.35	113 25.95
Chicago...	13 2.08	14 2.44	16 1.69	16 4.16	10 1.93	9 3.59	6 3.08	2 0.18	9 1.98	7 1.75	7 2.45	14 2.14	122 27.47
Albany...	10 1.31	15 4.63	13 2.00	14 2.10	13 5.08	9 2.92	11 1.92	9 7.21	11 3.20	7 1.67	6 0.91	15 2.54	133 35.39
Boston...	12 2.56	16 6.22	9 2.80	14 3.13	14 5.23	10 2.20	11 1.72	13 6.46	12 1.59	5 2.94	6 1.83	16 5.16	138 41.84
St. Louis..	0.93	2.98	5.10	10.84	5.42	3.49	2.49	0.65	3.69	1.66	1.36	1.32	39.33

*Upper number in each month shows number of days rain fell. Lower number shows total depth in inches for month.

What people seek is a winter climate, one that will invite

an out-of-door life, that means a climate that is dry, mild, with plenty of sunshine, without strong winds and where the soil quickly absorbs the moisture that falls and enables the invalid to be out of doors except when rain is falling. Such a climate Tucson affords, and I think that a careful study of the accompanying tables will show no place in this country, at least, that affords equal opportunities for a life in the open air.

TABLE VI.
PERCENTAGE OF POSSIBLE SUNSHINE IN 1893.

Station .	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
Savannah	53	47	51	60	48	52	67	33	54	61	51	53	53
New Orleans	51	48	59	55	49	40	49	50	52	59	48	66	52
Galveston	63	38	47	51	58	63	70	55	71	78	62	51	59
Tucson	86	73	72	87	81	87	61	61	78	85	79	73	77
San Diego, Cal. . .	66	70	56	75	66	61	73	76	69	75	71	66	68
San Francisco . . .	54	56	40	60	63	85	78	60	65	68	42	37	60
Denver	74	67	71	67	60	67	66	60	79	72	65	56	67
St. Louis	36	46	49	42	58	69	71	76	69	81	60	47	60
Cincinnati	31	27	40	26	44	62	65	66	50	59	41	25	47
Buffalo, N. Y. . . .	22	29	39	43	49	57	67	67	53	53	43	13	47
Boston	44	53	58	52	47	46	60	54	60	63	61	44	53

TABLE VII.

RECORDS OF WIND MOVEMENTS IN TUCSON FROM JULY, 1894, TO JULY, 1895.

July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan'y	Feb.	Mar.	April.	May.	June	Annual
4.8	4.9	5.3	4.2	4.1	3.9	4.4	5.	5.0	5.1	5.8	5.5	4.8

The above figures are the miles per hour

Many people come into Arizona and New Mexico every winter in search of relief from pulmonary troubles, many of them stop in New Mexico where they find all the towns affording suitable accommodation for invalids are at a high altitude. High altitude always means cold weather in winter, much rain and generally high winds. Northern Arizona is still worse in this respect and they are forced to move into Southern Arizona where the altitude of the towns is less and the weather warmer.

The chief benefits realized in this climate are in pulmonary and bronchial affections. Persons with severe cardiac affections should not come, as even the moderate altitude of this town is not favorable to such cases. Even far-advanced cases of tuberculosis often do surprisingly well here, and while they can not expect a cure, live in comparative comfort and find relief from many distressing symptoms. Most tubercular cases are sent from home only for the winter season; this, I think, is a mistake. As soon as a diagnosis of tuberculosis is made, if the conditions are such as to render a change of climate advisable and possible, I believe they should be sent somewhere in the arid region; while some do well in the hot summer of this climate, even better than in winter, there are more who do not stand the heat well. For those the cooler summer of New Mexico or Northern Arizona will prove more beneficial. The summer in the mountains close around Tucson can not be surpassed.

Oracle, at an elevation of 4500 feet above the sea, in the foothills of the Santa Catalina Mountains, 30 miles north of Tucson, has a delightful summer climate, and has two comfortable hotels for health-seekers. To those who enjoy camping, the beautiful pine-clad mountains all around us afford numberless camping-grounds of unsurpassed beauty and salubrity, here among the giant pines the summer days are cool and delightful, and the air is pure and bracing, and good hunting abounds.

Throughout the Territory there are many objects of interest to the tourists; curious Indian villiages, ancient ruins, the caves of cliff dwellers, the petrified forest and the Grand Canons of the Colorado are a few of the most important points

worthy of a visit. Everywhere there are new and strange beauties of the desert.

The climate of Tucson resembles that of Southern California. There is the same scant rainfall, warm winter and sunny weather. But the California air is moist and fogs are frequent, while in Tucson the air is dry and fogs and dews are never found. It will probably be a surprise to some to know that many of the best physicians in California habitually send their consumptive and asthmatic patients to Tucson for the benefit of the warm air, and to avoid the ocean breeze, fogs and the moist air arising from the large tracts of irrigated lands of California. The greater part of the year the people of Southern Arizona sleep out of doors. In this dry air this is not only safe but beneficial.

It takes some little courage to induce the invalid to follow this custom, but after a short trial they are unwilling to give up a practice that conduces so much to their comfort and well-being. The columns of the numerous press are responsible for the wide-spread idea that Arizona is lawless and uninhabitable. Nowhere will you find a more hospitable, generous and law-abiding people. Good hotels, churches and schools are found throughout the Territory, and one can have all the comforts and most of the luxuries of life in Tucson.

The Relative Value of Antisepsis and of Improvement in Technique, as Regards the Actual Results in Operative Gynecology.

By L. GUSTAVE RICHELOT, M.D.,

PARIS, FRANCE.

Presented at the Third International Congress of Gynecology, at Amsterdam, Holland, August 8-12, 1899.

[CONTINUED FROM PAGE 15, JANUARY NUMBER.]

THE INSTRUMENTARIUM.

I mention thus early that our epoch has seen the advent of a vast number of inventions which merit but forgetfulness.

This mass of instruments of an infinite variety of form which pretend to respond to every need of the operator, to facilitate his every movement, to adapt themselves to every detail, are none of them perfection. Certain ones have sprung into existence from time to time which have taken the place of older models with profit to us, and which have improved without augmenting the equipment of the surgeon. Personally, I do not like an excessive outfit of instruments, cases with numerous compartments, the lauded patterns which are everywhere displayed. The best results are obtained with the simplest instruments, in fact, the greater number of operations can be performed with a knife, a pair of scissors and a pair of forceps.

In spite of that our admiration for hemostatic forceps is not lessened; that marvelous invention for preventing loss of blood which tends toward cleanliness of the field of operation, which enables us to save the time required for much sponging and permits us to follow with precision a method and plan of operation previously marked out. Now this forceps tends to become more and more simple and we strip it of useless appendages with which it was at one time clothed. The ordinary 12-centimeter hemostatics and the long ones of 15 and 20 centimeters, with a straight, short bit, are all that we desire for the most serious surgical procedures. The long bits have gone out of use since handles of moderate length have been made. How fine are the forceps curved upon the flat and those upon the side; how useful the T-shaped forceps and the adhering forceps.

A late invention, and one of the highest order, to which we must accord unstinted praise, is the inclined table. The Trendelenberg position is certainly a source of progress; it has rendered our laparotomies easier and more certain, both by aiding us to confine and protect the intestine, and, above all, by rendering the pelvis with all its details easy of examination. Auguste Reverdin, so prolific in ingenious discoveries was the first to think of "suspension" for drawing out the fibromata and at the same time hit upon the inclined plane.

Certain operators appear to attach vast importance to forceps which have served them well; for myself I consider that one can remove a fibrous tumor very conveniently with a large

corkscrew, but that one can do it almost as easily with powerful forceps. It is, indeed, allowable for each one to have what he considers his salvation, or the needle which he prefers. But we must not count too much upon this or that instrument giving the true spirit to the surgeon. Confidence in an operation must be reposed, not in the employment of an ingenious device but in the understanding of the indications which are to be met. There is in existence a fenestrated forceps devised by Péan for grasping the adnexæ during a vaginal hysterectomy, and which takes hold with extreme firmness. Unfortunately, the difficulty here is not to seize the tube or ovary, but to avoid tearing them. Grasp the tissues as you will, but with ceaseless care, and harmony in all your movements, without which all is disrupted and all is lost.

To recapitulate, the mania for new instruments has been productive of nothing but the illusion of progress. Let us contrive only that which is strictly necessary, and restrict ourselves to that which is most simple. The surgeon who uses the best instruments is the one who knows the most about his own fingers and his own good sense.

THE SURGICAL HABITUDE.

If one comprehends that word in its broadest sense, he will discover in it the three masterful qualities—dexterity, ingenuity and judgment, by the aid of which the surgeons have, under the shield of antisepsis, been perfecting themselves for twenty years, and have entered upon paths which you shall soon tread with me.

Dexterity is infinitely varied. Some are born with it, others never possess it; but the majority acquire it and strive to develop it without cessation. Everyone of us could find something in his manual of operation on which he is years behind the time, some thing he would find difficult to explain. Thus, I once observed after vaginal hysterectomy secondary vesical fistulæ which showed themselves at the end of a week, and which seemed to me to be due to a little injury at the lowest point of the bladder. I observed six or seven of these during eight years. I took the same pains then as I do to-day in the separation of the bladder from the uterus I am about to

remove. I have not, to my knowledge, varied any step of the operation during this period, and still for five years I have not seen such an occurrence once. It is, indeed, possible that I have modified my manner and that I proceed more scientifically than formally, but I can not say where the difference lies. Progress in the technique is then a matter personal and instinctive, and something which we can not codify. The surgeon by habit operates rapidly. It may be said that antisepsis by lending great security has not been without detriment to the dexterity of gynecologists. They are prone to think that there is no longer need of exercising the fingers, and that an operation done slowly and hesitatingly is of the same value as one well done. One sees excellent surgeons—not to mention the mediocre, with whom antisepsis covers many an imprudence—abandoning all care in execution, glossing over details, complicating their procedures and lengthening their operations. The truth is that too long an operation stands every chance of being a bad one, because it is difficult to maintain perfect asepsis to the end, and because in feeble patients a certain nervous depression—the shock of operation if you will, adds itself to the risk of infection and the loss of blood. In order to proceed well and rapidly it is necessary to move with system, to execute quickly certain preconceived maneuvers, to go slowly over difficult passages but always to stop for breath, and avoid as far as possible interruptions, the abandonment of the work and recommencing.

One must constantly be on guard against false moves which lead to loss of time, must never be precipitate, and never operate for effect. My last phrase comes as a protest against excessive rapidity, the altogether too brilliant execution which may be termed slight of hand. To react against the neglect of technique for which the progress of antisepsis has been the pretext, does not mean to return to the simplest procedures or to the methods of our predecessors. It is only to be remembered that antisepsis is not all in all, and does not prevent the unfortunate one from experiencing numerous reverses, and that the surgeon of our day, more truly an artist than he of yesterday, should hold in high esteem cleanliness, precision and operative skill.

The ingenuity of the gynecologists has extended our resources by opening several ways of access to the pelvic organs, and by multiplying technical measures and methods. Besides their judgment has enabled us to choose between the procedures proposed by different authors, and has tended to moderate the zeal of those who refuse to be guided by indications which would enable them to reach their end in the most direct way, but persist in attaching too much importance to a certain manner of tying or cutting a pedicle, of dividing or uniting tissues. The multiplicity of methods as well of instruments is really an advantage. And see now, after long discussions, how we have come to choose our ways of access, to simplify our methods and to retain in the execution of our operations the only details which are of true value.

The ways of access to pelvic suppurations will serve as my first example. For a long time the suprapubic route was our only way of reaching the adnexiæ. In imitation of Lawson Tate we made use of it continually. This was, so to speak, the empirical period of the laparotomy. We were elated and flushed in our young experience of curing so many women, and the reason was that in one case we had to do with sterile pus, in another with slight ailments, or, indeed, because certain patients took care of themselves. But when the pyosalpinx were very difficult, very adherent or virulent, we still had a large number of failures—in what proportion? I have in mind a few statistics based upon a small number of cases, and published by their authors with the utmost sincerity. I have seen compilations where partial statistics have been collected second-hand, but I do not recall having read a single paper which gave a true idea of the gravity of our operations during this period.

About eight years ago vaginal hysterectomy was proposed and was supposed to afford us perfect security. In fact, those of us who studied and mastered it, saw therein an incontestible progress, and adopted it without reserve. I well know that French in origin it has remained French, and though meriting the esteem of our colleagues abroad it has not been universally adopted by them. I know, too, that in France herself it has not converted all operators, and that we still

have laparotomists who oppose it. And, indeed, laparotomy itself has not remained stationary. The Trendelenburg position, the new methods of total abdominal castration, have permitted it to maintain its position, and to make a good appearance beside its rival. Nevertheless, and in spite of all the perfectment, I repeat that certain pus of extreme virulence is the bane of suprapubic operations, and that in like cases with the identical kind of pus, vaginal hysterectomy works wonders. What a difference between the puncture of the pus tubes through an abdominal wound, and an incision from below. How insufficient and precarious is the aspiration of pus in the course of a laparotomy, and how completely the surgeon is master of the situation when having packed the vaginal wound with protective dressings behind the pocket of matter, he sees it bulging outward through his free incision, and can tear it with his fingers and work his way from above downward so well that the pus comes in contact with nothing but the vaginal tract, being kept from the peritoneum by the gauze packing. And what a difference in the way these two classes of cases recover. After a dangerous laparotomy there is fever, tympanitis, bad pulse, a drawn face, anxiety on the part of the surgeon, and the consumption of a large quantity of artificial serum. After a vaginal hysterectomy where fetid pus breaking forth in front or behind has inundated the uterus, the vagina and the fingers of the operator, the peritoneum is in no way contaminated and all remains serene. We have no more destroyed the microbes and their virulence here than in the other instance, but in the first case we have allowed them to enter a contest with the human organism, which is under all circumstances wrong, while in the second case we have diverted them and by our maneuvers have spared the patient an uncertain struggle.

Unfortunately the superiority of vaginal hysterectomy can not be expressed in statistics because it is impossible to compare different operators in these two fields. It were only possible for a surgeon who possessed an equal amount of practice and skill in the application of these two methods to have a correct idea of their relative value. All that we can say in favor of vaginal hysterectomy is that it has scored no failures,

and that after the discussion before the Society of Surgery in 1897, where all of us applauded the recent record of progress in suprapubic operations, the supporters of the former method remained full of confidence. Just as there are among painters certain ones of great gifts who after adopting a certain style never relinquish it; so there are surgeons whose methods are unchangeable and always bear the same stamp. But one must admit here, as there, individual aptitudes and inclinations, but after all none of us have the right to be satisfied with an incomplete education. The surest means of obtaining good results is to know perfectly all the routes which lead to the pelvic lesions, and to be able to choose this or that method of access in pursuance of strict indications, and not because a certain one is easiest. Vaginal hysterectomy is, from this point of view, a most praiseworthy operation. On the other hand, all surgeons are in accord as regards the conditions which impose upon us the choice of an abdominal incision, viz., uncertain diagnosis, doubt as to whether the lesion is bilateral in a young woman and the desire to be conservative.

The opening of the vaginal cul-de sac without removal of the uterus has taken on a new importance in recent years. At the Congress in Geneva in 1896, and since that time at the Society of Surgery, we have discussed incising the posterior cul-de-sac and have come to the conclusion that it is often inefficient, and can not be without danger, but we have found therein a valuable aid for evacuating simple cavities in contact with the vaginal wall, especially recent collections, very acute ones, and virulent ones which render complicated operations or opening of the peritoneum exceedingly dangerous.

To the performance of such an operation no sacrifice of organs is necessary. Of foreign operators, Martin, of Berlin, has obtained a number of fortunate results in the use of the anterior colpotomy. By that route pus tubes have been removed as well as cysts and fibromata. But if it is avered that by this there is such a gain, is this not, perhaps, one reason why the importance of vaginal celiotomy has been enlarged upon too greatly. For exploring the pelvic cavity and for treating lesions in the depths of it, anterior or posterior colpotomy are most excellent; but I do not think that this gives us

a right to exaggerate their importance nor to belittle the domain of laparotomy.

After pelvic suppurations I will speak of uterine tumors, the treatment of which has passed through analogous phases. Abdominal hysterectomy advanced slowly behind ovariectomy; we knew not what to do with this great charred pedicle; the region of the uterus was full of mysteries, the operation remained one of the gravest in gynecology. Also when vaginal hysterectomy offered to relieve our embarrassment, the same surgeons who found it efficacious for lesions of the adnexia, found it also wonderful for fibromata. And, in fact, there is no controversy possible, if we compare the success which it has given us in these tumors, with that of laparotomy performed at the same time. Progress was still more marked than in the case of suppurations, for all those who were not prejudiced against the vaginal way. To say that it is an operation without mortality would seem paradoxical, but in truth, I recall one or two faults which I have committed in operating, two or three cases of infection after simple operations, at times when the asepsis of my accouterment was not perfect; as for the rest, I have seen all the fibromata which were cut into pieces that would have passed out of a girl's pelvis, taken away with the greatest safety. All the operations were extraordinarily benign, since with rare exception they lasted but two hours. All the patients were without fever, without shock, and with faces bright and restful from the second day. I have seen forceps, especially in cases of fibromata, admirably worn without complaint and almost without discomfort.

But to obtain such results it was necessary to exercise judgment, and some overreached themselves by removing by this way tumors that were too large. Confident in their own ability they did not hesitate at an undertaking which lasted the greater part of three hours; these were of the mediocre class, and had a mortality which, for my part, I have never known.

This operation, nevertheless, was not at a standstill. The enormous fibromata were ever present to prevent our forgetting it, and I do me the honor to count myself among those who have always defended it, modified and improved it until the

time when our common efforts have made it all it is to day. Its transformation is complete and its results almost equal to those of vaginal hysterectomy; so complete that one no longer worries to ask himself which of the two operations is the more benign, but simply to assign to each the tumor which by size and disposition is best adapted to it.

A few words will suffice for my third example; the ways of access to the cancers of the uterus. Then again by successive steps, the operation of Freund, in its first form, with 70 per cent. of mortality, and vaginal hysterectomy, common since 1885, changed the situation, and after having overcome the greatest opposition gave us easy success in operating and results hitherto unlooked for.

[TO BE CONCLUDED].

Influenza is prevalent to an alarming degree in Italy. Turin and Rome being especially afflicted, although few cities are free. It is estimated that there are over 30,000 persons ill with the disease in the peninsula, and the Pope has ordered general prayers for the abatement of the epidemic. The disease prevails also in Spain, where in Barcelona alone 124 deaths were attributed to it on January 26.

An Unusual Breach-of-Trust Case.—A claim of \$5,000 has recently been brought against a Hartford, Connecticut, physician on the following somewhat extraordinary grounds: The doctor had agreed to take charge of a maternity case, but was not present when the child was born; a few days later the child died. The physician was then sued for breach of trust in the case as being responsible for the death of the child. The defence demurred to the complaint, stating that the father could not have acted as the agent of the child, and that the doctor did not contract with the unborn child for its delivery. As the case was brought because of the death of the child, the defence claimed that it should be quashed. The judge ruled that suit may be brought in behalf of a child unborn when its parents had made a contract to deliver and care for it after its birth, and found true cause for action on the part of the parents. The case has caused considerable interest throughout the State, and is the first of the kind brought under Connecticut statutes — *Boston Medical and Surgical Journal*.

EDITORIAL.

THE STATE CARE OF CONSUMPTIVE PATIENTS.

No question is absorbing the attention of the medical world at present more than that of the disposition of those afflicted with tuberculosis in some form, and particularly that of pulmonary consumption. No question is more important.

In the State of New York efforts are being made to have legislation enacted providing for the erection by the State of a hospital for the treatment of consumptive patients. Massachusetts, Michigan and other States have undertaken to solve the problem along these lines. At a recent meeting of the Medical Society of the State of New York, at Albany, an entire session held in the assembly room of the Capitol was devoted to a discussion of this subject by the members of the Society and by the members of the Legislature.

According to the report of the Committee to whom the question had been referred, at a previous meeting, for investigation, 14,000 persons died from consumption in the State of New York during the year 1899. Estimating that for every death by this disease there are five persons suffering from it in some form, gives the startling figures of 70,000 persons out of 7,000,000 in that State afflicted with that unfortunate malady, or 1 in every 100. What is true in New York State is more or less true in every other State in the Union. Tuberculosis, like all other contagious diseases, though almost universally prevalent, finds the most fertile field for its propagation and spread in the congested centers of population. The conditions of existence resulting from a crowding together of human beings lessens the resisting power of the individual to noxious influences and thus rendering him less able to withstand the attacks of disease. At the same time the opportunities for exposure to its contagion is vastly increased. We, therefore, expect to find the proportion of those affected to the

total population greater in those States which contain large cities or dense areas of population. While the proportion found to exist in the State of New York may possibly be slightly greater than that in other sections, the difference is really not very marked owing to the prevalence of the disease among all races and in all climates and countries.

The report of the Society further says that while it is impossible to determine the proportion of this number of sick (70,000) who may be classed as poor, investigations in New York and other large cities prove that the centers of infection are found chiefly in the overcrowded tenements of the most destitute class of the population. It is safe, therefore, to assume that of this vast number of persons sick of a disease which soon incapacitates them from engaging in any remunerative kind of labor, scarcely a tenth part should be classed with those whom long continued illness may not reduce to a condition of want. These facts not only show the enormous ravages which consumption makes upon the resources of the poor but they reveal the nature and extent of the task to be undertaken.

Efforts on the part of scientific investigators to produce a serum that will prevent or even retard the growth and development of the tubercle bacillus in the system have not been successful. On the other hand, the marked beneficial effects obtained in caring for these patients in specially arranged sanatoria or hospitals prove that at the present time it is the best method at our disposal.

An almost insurmountable obstacle to this plan is the cost of erecting and equipping the necessary institutions, and among the objections made to it is the fact that additional appropriations might very naturally be asked for in behalf of the syphilitic, the venereal and the cancerous. This might lead to a condition of philanthropic communism, or at least a paternalism on the part of the State that would render the burden of taxation unbearable.

The advocates of state sanitation for tuberculosis claim that the end justifies the cost. It has also been proposed that municipalities themselves erect such institutions in their proximity for the care of their own afflicted. It is claimed that the individual is taught how to take care of himself, the danger he is to others, the benefits of a better sanitary condition, which instructions, when he is discharged cured, he

carries back with him to his home and there insists upon it in his family and imparts it to his neighbors, becoming, in fact, a sanitary missionary. Thus the masses gradually become educated in a way to prevent the spread of the disease.

The keynote of the advocates for state care of consumptive patients is education of the people in the care of themselves, not only as regards those sick with the disease but for the protection of the community by instructing its members in the means of prevention as well as cure.

ADULTERATION OF FOOD PRODUCTS.

The extent to which the adulteration of food products is carried is almost beyond belief. There is scarcely a substance used for food that is not in some manner adulterated by the addition to it of a foreign material less expensive in price.

Adulterants are added for the purpose of lessening the cost of production for a certain bulk and are often so skillfully blended with the substance which they counterfeit that it is almost impossible for the average individual to detect the imposition.

So important is the purity of food products to the well-being of the nation that our national government has undertaken to investigate the extent to which this matter has been carried for the purpose of instituting measures by which the body politic may be protected from this evil, or, at any rate, prevented from being innocently imposed upon.

The committee on manufacturers of the United States Senate, after an extensive investigation of this subject, made their report to that body. The report is a very exhaustive one and is of marked interest to both the lay and scientific reader. Only abstracts are given in the daily press. The fact of adulteration was considered both from the point of its being a serious detriment to the public health, and from that of the fraud imposed upon the purchaser.

Commercial rivalry between business houses and manufacturing

firms has led them to cheapen their products by the addition of foreign substances for the purpose of securing a temporary trade advantage or by thus diminishing the manufacturing cost to secure larger profits on the sale of their goods.

The committee made the following recommendations: "To prohibit the sale of deleterious and unhealthful food products, and in regard to those food products which are simply cheapened by adulterants to compel the marking of those goods for what they are. Deleterious food products should be prohibited and the rest thoroughly regulated."

Two general plans have been suggested as to the matter of regulation: First, to put the important food products under the internal revenue law, as has been done in the case of butter, filled cheese, and flour. This, it is claimed, will protect not only the consumer and the honest manufacturer, but will establish a standard of excellence for such products as to cause a ready market for them in other countries. The other, and to our minds a better plan, consists in establishing a department under the Secretary of Agriculture to be presided over by a board which shall fix the standards for food, drinks, and for drugs based upon the American Pharmacopeia.

In the matter of drugs such a government requirement would be especially desirable. While it might not stop the pernicious evil of substitution, which is adulteration in its worst aspect, it would tend to correct, in a measure, a condition which is now deplorable. It would give the physician some assurance of having his prescription compounded with the ingredients ordered and of a sufficient degree of freshness and strength to obtain their therapeutic effects. Such regulations should also be enforced against imported articles, for it would be a serious injustice to allow the sale in this country of foreign products which do not come up to the standard required to be reached by our own.

In this regard, the report says, there is no doubt, in the minds of the committee, that large amounts of imported goods are sold in this country, the sale of which goods would be prohibited in the country from which they come.

We desire protection from goods of this kind whether it be food products or drugs. If there is a demand for such articles of an inferior

grade their manufacture or importation should not be interdicted but their character and quality should be so indicated on the package as a result of government inspection that the purchaser would not be deceived. Governmental regulation is the only preventative for these evils and we hope the present Congress will enact measures of sufficient stringency to regulate or remedy them.

OUR CONTRIBUTORS.

One of the most becoming traits under all circumstances is modesty, a virtue that may in a measure belong not only to man but to inanimate objects which are the creation of man's exertions and abilities. That we may not be thought lacking in this virtue which we extol is our earnest hope, and we trust we may be excused for having a certain amount of pardonable pride in the measure of success that has attained to our efforts in endeavoring to publish a clean and ethical medical journal.

It is not from a boastful desire, but rather that our friends and readers may know of the efforts we are making, that has led us to mention some of the names of those who have promised to assist us by contributing to our pages.

These contributions, with but a few exceptions, are written for and published solely in our journal, an honor to which we are deeply sensible.

The article on "Sanitoria for Consumptives," by Dr. Beverley Robinson, of New York, which was published in our January number, was contributed solely to the *COURIER*.

The leading article in the present issue is an unpublished contribution from Dr. Jos. D. Bryant, of New York.

An article on "Ectopic Gestation," from the pen of Dr. Egbert Grandin, one of the leading gynecologists of New York City, will be published in the March number of the *COURIER*.

An early issue will contain the paper by Miss Catherine Van Tussenbroek, M D., of Amsterdam, Holland, on "Ovarian Pregnancy,

or Pregnancy in a Graafian Folicle," which paper aroused much interest at the Third International Congress of Obstetrics, at Amsterdam, last August. This paper was sent by Dr. Van Tussenbroek, herself, to the COURIER. It is published also in the *Annales de Gynécologie et d'Obstétrique*, in Paris, France.

Contributions to the present volume of the COURIER have been promised by Dr. F. R. Sturgis, of New York, one of the leading genito-urinary surgeons of that city; Dr. A. M. Phelps, recently elected President of the Medical Society of the State of New York, probably the oldest of State medical organizations; Dr. E. G. Janeway, of New York, who is conceded by his colleagues to be the ablest diagnostician in that city, if not in America; Prof. Hector Treub, of Amsterdam, who is the leading gynecologist of Holland. Prof. Treub's paper will be prepared for and contributed solely to the COURIER; Dr. Joseph Price, of Philadelphia, a gynecologist of international reputation; Dr. Alexander McPhedron, of Toronto, Canada, Professor of Surgery in the University of Toronto; Dr. Isadore Dyer, of New Orleans, Professor of Dermatology in Tulane University, and many others.

The members of the local profession have given their cordial support in the past and we rely upon them to a still greater extent to encourage and sustain us in our efforts.

The St. Louis Medical Society and the Medical Society of City Hospital Alumni have each designated the COURIER as its official organ for 1900.

We shall endeavor to maintain a publication worthy of the confidence and commendation of our readers

Quack Medicine in Vienna. — The Austrian government has forbidden the sale in Vienna of "pink pills," a quack remedy made in Paris. Physicians are forbidden to prescribe them, druggists and others are forbidden to sell them, newspapers are forbidden to advertise them, and the distribution of circulars through the mail or otherwise setting forth their alleged virtues is also forbidden. The reason given for this action is that the composition of the pills is kept secret, and further that the remedy is put forth as a cure all.

FOREIGN CORRESPONDENCE.

THE TREATMENT OF RETROFLEXION OF THE UTERUS, IN THE NETHERLANDS.

In late years there has arisen in the Netherlands two strong partisans regarding the different methods of treating uterine retroflexions, Professor Treub, who seldom operates on this class of cases, and Professor Veit, who favors the Alexander operation.

At the recent meeting of the International Congress of Obstetricians and Gynecologists, held at Amsterdam, Professor Treub stated,¹ that he had operated only in about 2.5 per cent. of all cases seen in recent years. The majority of the 97.5 per cent. remaining were either treated with a pessary, or not at all. Treub is content with this treatment and his patients satisfied. When casually examining a patient, he finds a condition of retroflexion which gives rise to no symptoms the condition is left as he finds it and the patient is not informed. If, however, the condition gives rise to symptoms, he endeavors to restore the womb to its proper position by bimanual manipulations; if this fails, he tries the method of Küstner (described in Veit's *Handbuch*), or that of replacement by means of the sound. If this, too, is unsuccessful, or if, after having been replaced, the womb falls back into its former position, or if there is the probability that it is retroflexed and adherent the adhesions are torn away under anesthesia according to the method of Schultze. After the reposition he applies a properly adjusted Hodge or Thomas pessary. If the pessary is too large it causes pain or discomfort, if too small it allows a slight retroversion. In retroflexions, with a slight degree of prolapse, he often obtains better results from a ring-pessary. Most all cases are amenable to this kind of treatment, but in rare instances and especially those of retro-displacements of virgin uteri operation is necessary. Where the adhesions can not be separated according to the method of Schultze.

laparotomy with ventral fixation is the correct treatment. In other instances the Alexander operation (according to Edebolds) is indicated and sometimes used, but not as a rule. Pregnancy has been observed but once to occur in such a case (and in one operated upon by myself). The patient passed through her period of pregnancy without any untoward symptoms, the child lying in a normal position. She was delivered at term, her attending physician, however, performing version and extraction on account of a placenta previa. The child lived and the mother recovered. I have frequently observed, however, that patients, after Alexander's operation, complain of abdominal pain during menstruation. The menstrual swelling of the uterus and the strong and painful stretching of the round ligaments are probably the causes of the complaints. De Bruyne,² with the assistance of Prof. Treub, has written lucidly upon the advantages in the use of the pessaries and their method of application. Dr. Meurer,³ a pupil of Treub's, after describing several methods of operation, concludes that operation should not be performed unless highly necessary, on account of the danger to life. If, however, an operation is indicated, ventrofixation should be used in a case of retroflexion with adhesions. If the womb is retroflexed and not adherent and the woman has passed the period of child-bearing, ventrofixation should be performed. If the patient is a young woman, choice should be made between ventrofixation and shortening of the round ligaments. The advantages of the latter operation, according to Meurer are, that neither pregnancy nor parturition are interfered with, the abdominal cavity is not opened, and hence there is no danger of peritonitis and there is likewise less chance for hernia. On the other hand, unless one has had constant practice, the Alexander operation is more difficult to perform than ventrofixation, complications are more apt to be met with, and the likelihood of its recurrence greater.

The principal one of the few Dutch defenders of the Alexander operation is Professor Veit (Leiden). With a relatively small amount of material he has performed this operation fifty-three times in one and one-half years. An incision is made over the middle part of Poupart's ligament¹ and extends to the crest of the pubis. The round ligaments are sought for at the opening of the external ring and are shortened

10 c.c. more or less. Of the fifty three operated upon, one died; of the remaining fifty-two, twenty-two have been subsequently observed. In two the condition returned. Once the operation failed on account of the breaking of both ligaments, while in five cases the inguinal canal had to be opened to find one or both of the ligaments. In one case double inguinal hernia followed the operation. In seven cases of retroflexion with adhesions, which were separated before operation by Schutze's or other methods, no return of the condition was observed. An uninterrupted condition of pregnancy has been observed twice, but as yet no instance of parturition.

To my knowledge no other methods have been used in the Netherlands. The Thure-Brandt massage method is not in high favor, but few gynecologists use this method and with but indifferent success.

BIBLIOGRAPHY.

1. Comptes rendus du Congress international d'obstetrique et de Gynecologie, 1899. Séance d'ouverture.
2. De pessarium therapie by retroflexie von de uterus.
3. Ower operatie behandeling graviditent en partus. Tydschrift voor Verloskunde en Gynecologie.
4. Fraser, Retroflexie operaties. Leidey.

P. C. T. VON DER HOEVEN, M.D.

Amsterdam, Holland, January, 1900.

Malaria in Central Asia.—According to the *Turkestan Messenger*, 595 persons died from malaria in the latter half of September in Tashkend. The number of persons severely ill with the disease during that time was 1718.

A Cuban Medical Congress.—It is proposed to hold a medical congress in Cuba under the auspices of the Sociedad de Estudios Clínicos of Havana. The committee appointed by this Society has consulted with members of other medical societies on the Island, and representatives of those will soon meet to appoint an executive committee. The date and place of meeting will be decided by this committee. The first and only Cuban medical congress was held about ten years ago.

SOCIETY PROCEEDINGS.

ST. LOUIS MEDICAL SOCIETY.

*Meeting of January 20, 1900; Dr. Robert M. Funkhouser.
President, in the Chair.*

An Abdominal Tumor.

DR. LAIDLEY.—I have a specimen which I think is out of the usual, so I wish to present it. The history of the patient is: She is 30 years of age; has lost her hearing, being almost entirely deaf; was delivered of this child two months ago at full term, the child being healthy, and she now presents herself with a tumor which is well marked, located about the center of the abdomen, the greatest prominence being a little above the umbilicus. The uterus could be felt high up. The abdominal cavity was opened this morning and I found in the anterior wall very extensive adhesions to the tumor; there were a number of folds of the bowel likewise adherent on the top of the tumor, which were dissected out. It had a pedicle probably an inch and a half long, which is very peculiar. The ovary and Fallopian tube were found to be absent on that side; on the left side they are perfectly normal. I am not able to determine the exact nature of the tumor. Dr. Bremer suggested that probably it was a sarcoma developed from the ovary, and that in its development it carried with it the ovary and likewise obliterated all semblance of the Fallopian tube, which is certainly a very strange thing. There was an escape of pus which came out of these little points made by sticking in a pin which would indicate a breaking down of the tumor, but fortunately no pus came out until the tumor had been removed. The peculiarities of the case are that it existed during pregnancy, for certainly it could not have developed during the past two months; the fact that it was adherent to the anterior abdominal wall; that the patient went through the full period of gestation and was delivered of a healthy child.

Discussion on a paper read by DR. BRANSFORD LEWIS, entitled

Complete Exstrophy of the Bladder.

DR. NICHOLSON.—I understand Dr. Lewis to suggest that one of the causes of this condition is that a certain amount of the urine was passed from the bladder during fetal life, which might give rise to a retention of the urine and caused rupture of the anterior abdominal wall. While that may be a possibility, yet I saw a case of congenital atresia of the ureter in which there was no interference with the development of the pubic bones, so that congenital atresia may occur without any absence of the anterior wall of the bladder.

The different methods of treating exstrophy have been fully outlined by Dr. Lewis, and the different methods of transplanting the ureters into the rectum has been done for some time past. When I was in Bonn, some years ago, Trendelenburg showed a case in which he intended transplanting the ureters from the anterior surface of the abdominal wall to the rectum; he believed the objection to that method, if successful, was the fact that a large amount of the urine would be absorbed by the rectum, and that in some cases of which he had heard but of which he knew comparatively little, uremia had resulted, and he believed that uremia was due not to any suppression of urine, but to absorption of urine or uric acid into the blood from the rectum.

The different methods that Dr. Lewis outlines include the method of forming this anastomosis, and it seems to me to be the most practical method of which I know, and I think there is probably more future for it than by any of the others.

DR. GRINDON.—Cases of exstrophy of the bladder are so rare that a report of a case is very interesting. This case recalls to my mind one which was present at the City Hospital in 1878, when I was a student, and which two years later occupied one of the wards of the Female Hospital during my service there as interne. This patient was a young woman, 18 years of age when I first saw her, of Irish parentage and of unusually fine development except with regard to this one defect. In noticing the unusually good muscular development of this man I was reminded of that patient. She was short of stature, but otherwise well developed, and she had the full, round feminine form.

The exstrophy, however, was very complete. There was absence of the rami of the pubes in the median line and the pubic hair grew on each side of the exstrophied wall of the bladder. There was a very short vagina and an infantile uterus. That case was operated on by one of our local surgeons by one of the methods described by Dr. Lewis, that was by dissecting out flaps from each side of the exposed bladder walls and bringing them around in front. Union was secured leaving very large cicatricial surfaces at the sides and in front, but the condition of the patient after the operation was far worse than before from the very causes which the Doctor has detailed in his résumé of the operations. Of course there was no improvement as to the incontinence of urine. The urine dribbled away from the posterior opening and was not retained any more easily by any of the appliances that were used in consequence of the consequent irritation, excoriation and inflammation of the skin surface which was turned in toward the bladder and in the forming of the anterior wall of this artificial bladder was such that after a time the patient desired that the flaps that formed the anterior wall of the bladder should be cut away, and it was done; but her condition after the operation was worse than before. The bridge of tissue was cut across and the flaps again turned out. After that she was naturally averse to having anything further attempted, and during her stay in the hospital she had an attack of acute articular rheumatism, with which there were heart complications, of which she died.

DR. KIEFFER.—Did this patient have any ability to retain her urine?

DR. GRINDON —Absolutely none; the urine ran away. There was simply a bridge of tissue thrown across the exstrophy so that it served the purpose of protecting the exstrophy from pressure and friction of the clothes, but this became very filthy, became septic; this pocket could not be cleaned out and her condition was far worse than before the operation.

DR. KIEFFER.—I do not care to discuss the merits of the operation at all, but I would like to have the essayist, when he closes his remarks on this case, give us something of an outline as to what he

proposes to do—what sort of an operation he will perform on this patient?

It seems since it is absolutely impossible to get any result that gives us a bladder that will act as a reservoir so that the patient can retain the urine and then void it at intervals; that the very best result that can be aimed at would be to fix the bladder in such shape that the urine would drain off as it did in the case mentioned by Dr. Grindon. At the meeting of the American Medical Association at Columbus last year cases of this kind formed the basis for quite an extended discussion, and two enthusiastic young surgeons presented two cases that had been operated on by themselves, and I recollect particularly that the best result was one obtained by Dr. Eastman, and it seemed to me that the result did not give him any advantage over this young man.

I have seen several cases, half a dozen I presume, and of all of them this man is in the most favorable condition for taking care of the tissue and preventing excoriation of the tissues. The Eastman case was to outward appearances a very favorable result, but all he could do was to have a rubber receptacle, such as the one worn by this young man, to receive the urine, and it seemed as if he had not very much advantage over this patient without an operation, so unless there is some operation that would close the raw surface and tack the tubes into the rectum so that he could retain the urine for a while and void it at intervals, I do not think much good can be accomplished by an operation. It seems to me that this man is in about as good shape as he is going to get. I would like to have the Doctor also tell us how vesico-rectal anastomosis is going to be safer for the kidney than implanting the ureters into the rectal wall slantingly, taking care to leave the end of the ureters which has sphincter action in it, and how he would protect the kidney from infection. It seems to me that the patient might have the same difficulty that Dr. Grindon spoke of, that the pocket could not be cleaned out.

DR. FUNKHOUSER.—It would be very interesting to find out where the umbilical cord was attached. Have you made any examination as to the round ligament that is supposed to pass up under the

liver? Have you put your finger up so that you could trace the remains of the umbilical vein?

DR. LEWIS.—No, sir. I would like to ask Dr. Nicholson where the urinary outlet was in the case of the patient with atresia, and whether any urine was passed.

DR. NICHOLSON.—It was a child only a few hours old, no urine was passed, and there was also an imperfect rectum.

DR. LEWIS.—In reply to Dr. Kieffer's query as to what sort of an operation I proposed, I did not say I would operate. On the other hand, it is thought that in certain instances retention of urine overcomes the retaining power and causes a rupture of some part of the urinary channel. In this case it is supposed that the rupture was of the whole dorsum of the ureter and the anterior bladder wall, and that they were not subsequently reunited. It is thought that sometimes a rupture occurs posteriorly instead of anteriorly, for instance, producing hyperspadias. I have some photographs here of a patient on whom I did an operation for perineal hyperspadias; that operation did accomplish something. I do not believe in operating just for the sake of handling the knife, etc., and I believe it is useless to endeavor to make a covering for an exstrophic bladder, such as this, and not accomplish anything by it. In this condition of perineal hyperspadias there was an opening of the urinary channel directly into the perineum and the patient had to urinate in a squatting position on a vessel in order to keep himself from getting soiled. He had been operated on several times to carry the flow from the perineal opening forward to the end of the rudimentary penis, but no success had attended those several operations, and I was fortunate enough to make a floor, which shows in this photograph, and I would like to present it as an indication of how complete perineal hyperspadias may be remedied by making a new floor from the perineal opening to the end of the rudimentary penis. After that the patient could urinate in an erect posture like a respectable man ought to do, and could direct the urine into a glass or similar vessel. And then again a condition such as this patient presents raises questions aside from the possibility of success in directing the urine into the rectum.

In the first place this young man is in rather the lower walks of life; he is suffering no actual pain or discomfort to any large degree. He is not ambitious to walk in the more refined states of society, to go to parties and participate in functions that would make people turn up their noses when they smelled his odor. But, on the other hand, he goes in the lower walks, and makes his living as a night-watchman in a rooming house, takes care of the beds, etc., and is really not much troubled with his condition, so that if a successful operation could be assured him, I do not know that I should advise an operation; he does not need a change of condition like a person would in a higher walk of life. And then again it is a dangerous procedure to make a channel into the rectum.

Speaking in general, I believe the rectal channel is the solution of the problem whereby the vesico rectal anastomosis or implanting of the ureters of the trigone into the bladder, I think that is a happy solution of the problem, because all these various plastic procedures, no matter how well executed, do not satisfactorily change the conditions. Numerous patients have been operated on and the success has been doubtful just as it was in the case spoken of by Dr. Grindon.

Twenty-two cases have been operated on by the rectal method of transplanting the ureters, and success has attended a very large proportion of them. Only three of them, I believe, died, and the operation has only been in existence since 1894, and this is certainly a very great recommendation of the operation.

The operation has been performed mostly by German surgeons. One gentleman in this country has made a successful Midal operation, that was Dr. Allen, of Cleveland, Ohio. As the anastomosis that has been suggested has never been done on the human subject yet, and is simply a hint to problem workers in surgery, there may be something developed from it. I should not attempt it if I were going to operate in this case, and I do not advise any operation; if I did any operation it would probably be a Midal method operation of transplantation. Several different procedures have been suggested to this man. Dr. Senn suggested one procedure and Dr. Bryson another; Dr. Dickson also has seen him, but I think the patient is sensible in not agreeing to any operation.

*Meeting of January 27, 1900; Dr. Robert M. Funkhouser,
President, in the Chair.*

Puerperal Septicemia Treated With Antistreptococcic Serum.

DR. S. J. BARKER reported the following case: Patient, 35 years of age, had had abortion performed by midwife when three months' pregnant; had fever of irregular character; abdominal pains, and distension; coated tongue; vomiting; diarrhea, and a slight fetid uterine discharge. No retained septic material found in the uterus, which was irrigated. Daily vaginal douches used. Symptoms became worse, temperature continued to rise. Three weeks after first visit, patient had severe chill, followed by temperature of 107° F., which diminished under cold sponge baths. After consultation, 20 c.c. of antistreptococcus serum was injected; in eight hours, temperature decreased from 104.5° to 102° F., and reached normal twenty hours after the first injection. Temperature arose slightly the next two days, but diminished after an injection of 10 c.c. of serum. Slight rise of temperature occurred from time to time, for which the antistreptococcic serum was used, in all 70 c.c. The patient completely recovered. His experience with the serum has been limited to this case alone.

DISCUSSION.

DR. MARTIN had never used antistreptococcic serum in puerperal septicemia; he had used it in a supposed case of ulcerative endocarditis with good results, the patient recovered. He cleanses the uterine cavity and relies upon stimulants and cardiac tonics.

DR. ROSS was of the opinion that the disease must be combatted in the system, local measures are insufficient and he does not use them; there is also danger of perforation of the uterine walls by the curette.

DR. MEISENBACH empties the uterus, irrigates it, uses stimulants, iron, quinine, strychnine, and a liberal diet.

DR. SCOTT endorsed the statement of the previous speaker. He is opposed to constant irrigations of the uterus; he cures and irrigates never more than twice. If there is tympanitis he applies warm applications over the uterus.

DR. NEWMAN has had little experience with antistreptococcic serum. He cures the uterus thoroughly, irrigates with an antiseptic solution, and applies pure carbolic acid to the uterine cavity.

DR. FAIRBROTHER said thorough cleansing of the uterine cavity should be done on the immediate invasion of the disease. Swabbing out the uterine cavity, he said, is preferable to irrigation, after which it should be packed and reliance also placed upon constitutional measures.

DR. FUNKHOUSER has had good results from the use of antistreptococcic serum, but also advocates a thorough cleansing of the uterine cavity. In a rise of temperature, following the rupture of a large sac containing a clear fluid during celiotomy, the serum was used with beneficial results.

DR. NICHOLSON had used the serum in one case. Patient had a chill at midnight, temperature 105° F. The uterus was thoroughly washed out soon afterward. There being no change at 8 A.M., 30 c.c. antistreptococcic serum was injected. At 4 P.M., temperature was 101 F., and patient made rapid recovery. He does not know whether the benefit was due to the uterine irrigation or to the serum.

DR. GELLHORN said when temperature remains high after uterine irrigation the infection spreads beyond the uterine walls. He is favorably inclined to the use of the serum. He had seen vaginal hysterectomy performed without avail for this condition.

*Meeting of February 3, 1900; Dr. Robert M. Funkhouser,
President, in the Chair.*

Abnormally Developed Kidney.

DR. KIEFFER presented a specimen of a kidney, found post-mortem, occupying the left side of the pelvis, in a male subject, where the appearance of the contiguous structures showed it had developed. The kidney had two arteries—one from the abdominal aorta at the point of bifurcation, the other from the left common iliac, near its beginning. It had two veins emptying into the common iliac a little further from the fork of the vein than the source of the arteries. The

ureter was about six inches in length—the normal ureter being from fifteen to sixteen inches.

DR. FORD.—It is difficult to account for the abnormalities in development. The kidney is developed from the Wolffian body and descends at a certain period of embryonic life into its normal position. It is difficult to understand how its vascular connections could be so changed.

Acute Arsenical Poisoning.

DR. T. A. MARTIN reported a case of acute arsenical poisoning. The patient had taken a large quantity of Paris green, with suicidal intent. Teaspoonfuls each of mustard and salt in half a pint of hot water was ordered by telephone, which caused emesis. Immediately after arrival the stomach was syphoned out with hot water, the whites of two eggs were then given followed by half pint of milk, which was vomited half an hour after taking. Castor oil was also given but was vomited. Whites of eggs repeated every half hour, and milk every hour. Vomiting and retching continued for twenty-four hours, with severe gastric and abdominal pains, which were relieved by opium. Dessertspoonfuls each of ferric hydrate and milk of magnesia were given alternately every two hours. All medicine except magnesia discontinued at the end of twenty-four hours. Marked diminution of secretion of urine for forty eight hours, and contained a small amount of albumin. Patient made a good recovery.

DR. J. K. BAUDUY.—Gastritis never occurs except as a result of the toxic administration of drugs or irritants. Apomorphia or sulphate of zinc are the most reliable emetics; after that the stomach should be irrigated and iron administered with an alkali. In chronic arsenical poisoning iodide of potash is the best agent to use. Chronic arsenical poisoning shows its effects first on the nervous system, affecting both motor and sensory tracts, resulting in paralysis, anesthesia, hyperesthesia, etc.; it has also an irritating effect on the kidneys.

DR. FORD.—Lead and arsenic have a strong affinity for the liver, they persist there for a long time and are difficult to eliminate. The prolonged use of Fowler's solution in chronic malarial cachexia, where it is sometimes given as an adjuvant to quinine, and in large doses when quinine fails, is both injudicious and injurious.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

Meeting of January 18, 1900; Dr. Geo. Homan in the Chair.

DR. C. FISCH read a paper (see page 90 of this number) entitled
Studies on Lactosera and on Other Cell-Sera.

DISCUSSION.

DR. R. B. H. GRADWOHL thought work in this line would aid in clearing up our theoretical knowledge of the mode of action of anti-toxins and tend to explain the natural immunity which normal individuals exhibit toward some of the specific diseases. It has been stated that when lactosera is heated and mixed with normal animal serum it would coagulate casein. If this is true, how is it explained? Does the mixture of the ferment in the normal serum take the place of the serum in immune bodies in the lacto sera? In a work on agglutines, it is stated that the splenic blood of a typhoid fever patient did not give the agglutinating reaction as well as blood from other situations. Was it because of the agglutines losing their power?

DR. GEO. HOMAN asked if the terms immunization and immune bodies were used in a general sense, or in reference to a pathological condition, produced by specific organisms, bacterial in origin.

DR. CHAS. SHATTINGER asked if the precipitation of casein by lactosera would take place in the absence of a calcium salt. Physiologically, casein will not be precipitated under such conditions. He asked if similar experiments had been made with other products, as pepsin instead of rennin, and if such experiments had been sufficiently made in different directions to permit general conclusions to be based upon them.

DR. HOMAN wished to know the effect of chloroform upon the milk, the effect also of filtration. Was immunization regarded as purely a chemical or a vital phenomenon.

DR. SHATTINGER asked if attempts had been made to produce immunity by injecting either pure casein in emulsion or whey, and what had been the results.

DR. FISCH: In regard to immune bodies, Dr. Gradwohl is mis-

taken. The immune body is a substance which is not destroyed during the heating process, but the ferment is destroyed; in the normal serum the immune bodies are not affected. The terms immunization and immune bodies were used only for convenience sake and had no direct bearing upon the subject. By immunization against milk is meant the production of a substance which has the power on the one hand to combine with the particular cells of the injected animals or with their protoplasmic products, and on the other hand contains a molecular group with a specific affinity for the ferment, so that the latter by this combined action is brought in contact with the specific cell or with the protoplasmic product. This introduced into another animal will protect it from the action of casein. The immune body in such a fresh animal will combine on the one side with the ferment molecule and on the other with the casein molecule injected. In regard to the influence of calcium salts, the speaker had in some experiments used boiled milk and afterwards adding the lactoserum. Although part of the calcium salts were precipitated by boiling, he did not find that this had any effect on the action of the lactoserum. We know nothing about agglutinines, and at present there is a difference of opinion between those who maintain that the agglutinines are nothing but the bacteriological products remaining in the infected organism, and those who claim that they are the products of the diseased organism. So far as he was aware, experiments with other ferments had not been made, with the exception of some experiments on emulsin. It opens the question, whether in the normal fermentative action there is such a process as is found in lactoserum, whether the ferment does not act directly on the body to be disintegrated but rather necessitates the interaction of some kind of an immune body, or, as Ehrlich calls it, a *Zwischenkoerper*. Ehrlich showed that in the normal hemolytic quality of guinea-pig serum the hemolysis was not due to a simple fermentative action, but was composed of two phases, in one of which the ferment combines with the immune body, while in the other the immune body attaches itself to the body to be destroyed. The object of preparing the milk in the way described was to have a certain quantity of milk on hand and to keep it from undergoing changes. About one per cent. of chloroform was added; it had no effect on the protein bodies

but did effect the fat to some extent. Filtration was for the purpose of removing the fat; by filtering three or four times most of the fat can be removed, and then after the casein has been precipitated an almost perfectly clear fluid is obtained. Casein, commercially obtained, is quite a different substance from that contained in the natural milk, for that reason he had not tried an injection of it. He believed that casein as present in milk is not a simple chemical compound, composed of simple or equal molecular groups, but that it is the result of certain distinct combinations of a number of such groups. The action of the antitoxin, the hemolysis, etc., is a chemical one, pure and simple. That is the doctrine of Ehrlich. It is merely the chemical affinity between specifically built bodies. Lactoserum does not act at a low temperature, and the fact that it does not act until a certain temperature is reached, goes to prove its chemical action.

DR. A. W. OLCOTT read a paper (see page 103 of this number) entitled

Climate of Tucson, Arizona.

DISCUSSION.

DR. HENRY JACOBSON had sent a patient to San Antonio, Texas, who was much pleased with the climate at that place. There it frequently rains during the winter months, lasting an hour or two, but the ground dries rapidly, and flowers bloom all winter.

DR. A. H. MEISENBACH had never been in Arizona for any length of time, but had enjoyed a vacation period in Southern California. This region was very much like Arizona in elevation, sunshine, and many other conditions. He thought too little attention was paid to climatology by physicians, and that many other medical conditions could be benefited by a change of climate. One of the great drawbacks to the Mississippi Valley was the atmospheric conditions. Individuals do not take the necessary amount of physical exercise owing to the enervation resulting therefrom and the lack of exercise predisposed to conditions which are difficult to rectify later on. In that Western country he was surprised at the amount of exercise he was able to undergo without fatigue or distress. In considering the ques-

tion of change of climate, a place suitable for that particular patient must be selected, for every consumptive is a law unto himself, as all consumptives do not do well in the same climate. Each individual case must be studied in regard to the physical condition present, and a climate best suited for that case advised; the patient should then be referred to a reputable physician in that locality, allowing him to prescribe the proper elevation best suited for his condition. The sunshine, humidity, or dryness of the air and the elevation are important factors in the well being of the individual, and if these matters were studied more by the physician, less medicine would be given these patients and more advice to seek regions more comfortable, agreeable, and beneficial and at an earlier period in the history of the particular case. The mineral springs of this country should also receive more attention from physicians than are at present given to them. their benefits are not yet thoroughly understood

DR. FRANK HINCHEY had spent about eight months in New Mexico. Owing to the scarcity of rain irrigation is extensively employed and upon this many of the towns depend for their water supply. This necessarily renders the air detrimental to the consumptive, instead of an occasional rain there is a continual moisture. The damming of the river for irrigation purposes at Phoenix, which was once regarded as an excellent place for consumptives, caused a like condition there and one which was at least not favorable if not detrimental. This is also true in a degree of Eddy, N. M. The question of occupation of the patient's time in a town in this region is important. The ideal life for them is one on a ranch. With women the problem is more serious, it requires a good deal of courage for them to undergo the unpleasant features of a ranch-life. In consumptive patients the question of the necessity of earning a livelihood must also often be considered along with the climate. In this respect El Paso, Texas, was more desirable than most places, as it gave opportunities for securing employment. The humidity of the air and the coldness of the night-air making it unsafe for the patient to be out in the evenings rendered Southern California undesirable. He thought it unwise to send away patients in the third stage of consumption, they live only a few months and die. The medical service in these places is excellent; many of those who

go there are physicians who have gone there on account of overwork or study. The importance of an outdoor existence should be urged upon every patient sent to those regions.

DR. B. S. SIMPSON thought the climate of San Antonio, Texas, an ideal one for consumptives. It is often difficult to decide what is the best altitude to select for incipient consumption. The diminished air-pressure of altitudes such as that of Denver, Colo., sometimes caused hemorrhages and increased progress of disease.

DR. J. G. MOORE had acquired to some extent a prejudice to the climate of Arizona, and was glad to hear the paper on the climate of that region. He had known of a number of patients who had gone to El Paso, Tex., most of them did well; the ideal place, theoretically, is in the arid regions, and a large proportion of them will be benefited in New Mexico, Arizona, and Texas, though they will go from place to place trying to find one suitable for them

A Colossal Legacy.—Mme. Medvednikova, the widow of a wealthy merchant, died recently on her estate near Moscow, leaving 5,000,000 rubles (about \$3,000,000) to charity. Of this sum 1,000,000 rubles is designated to establish a hospital for incurables in Moscow, 600,000 to build an asylum for idiots and epileptics in Moscow, 500,000 to build a hospital for the treatment of chronic diseases in Irkutsk, and smaller sums for various other institutions.

The Explosive Lyddite.—The *London Graphic* says: This high explosive, thus called from the name of the small Kentish town and gunnery center where the experiments with it were made, is nothing else than picric acid brought into a dense state by fusion. Picric acid is a bright yellow substance freely used in peaceful industries for dyeing purposes. It is obtained by the action of nitric acid on phenol or carbolic acid. It burns very violently, and, owing to the tremendous blast produced by the explosion, the destructive effect of a bursting shell filled with it is some eleven times greater than that of a shell filled with powder. Common shells of forged steel filled with lyddite are used with 6 and 9.2-inch breech-loading guns, and with howitzers; also with 4 to 6-inch quick-firing guns.

REPORTS ON PROGRESS.

MEDICINE AND THERAPEUTICS.

Meat Diet in Nephritis.

Alois Pick (*Prager Med. Wochen*, 14, 16, 22; *Archiv f. Verd. krankh.*, V. 4) has endeavored, experimentally, to solve the much disputed question as to the permissibility of a meat diet in nephritis. Long-continued investigations showed him that the amount of albumin excreted by a nephritic undergoes great variations quite independent of the diet. He was unable to perceive any difference in the behavior of the patient whether a strict milk diet or a mixed diet was given.

The Value of Nutritive Enemata.

Roux (*Gaz. des Hopitaux*; *Archiv f. Verd. krankh.*, V. 4) has investigated the value of nutritive enemata by comparing the rapidity of emaciation in patients who were kept absolutely without food and those who received nutritive enemata. He reports that the latter, in the great majority of cases, do not at all retard the emaciation. The cases in which nutritive enemata prevented emaciation or produced even an increase in the patient's weight were individuals with dilated stomachs or profuse vomiting. In these cases the organism is deprived of its normal supply of water, and they gain in weight because the enemata supply water they have previously lost.

Diabetic Coma.

Ebstein (*Virchow's Archiv*, Vol. 155) reports the following interesting case of diabetes: A housemaid, 27 years of age, whose sister had died of diabetic coma, came to the clinic suffering from severe diabetes. A few weeks later she was again well enough to work, but after a year died suddenly in diabetic coma. The autopsy revealed a lipemia, fat emboli in the blood vessels of the lungs, kidneys, veins,

etc. In connection with this case Ebstein discusses lipemia and fat embolism in diabetes, for which the reader must be referred to the original article. The prognosis of lipemia is very bad in all cases in which the fat is produced by the degeneration of the organs, especially of the cellular tissues of the blood.

Condylomata Ani.

Jakowlew (*Archiv f. Verd. krankh.*, V, 4) reports a case of condylomata ani. While endeavoring to burn off a portion of the tumor with the Paquelin cautery, gas suddenly escaped from the bowel and coming in contact with the cautery produced an explosion and a flame two feet long. *Si non e vero e ben trovato.*

Endocarditis Occurring in the Course of Tonsillitis.

F. A. Packard (*Amer. Jour. of the Med. Sciences*, January, 1900) reports 5 cases of endocarditis occurring in the course of tonsillitis:

CASE 1.—L. S., white, aged 4 years, had previously been carefully examined and no visceral lesions found. December 24, 1899, a slight tonsillitis developed with temperature of 102.6°. Under treatment the tonsillitis improved, though the temperature remained high. On the third day a loud, whirring systolic murmur appeared at the apex, which had traveled 4 cm. to the left of the nipple line. Under treatment the patient grew steadily better and the cardiac dilatation disappeared, but after a year he still had a blowing systolic murmur at the apex, well transmitted to the anterior axillary line, with accentuation of the second pulmonic sound and the right border of cardiac dullness at the right edge of the sternum, the apex beat being in the normal position.

CASE 2.—D W., white, aged 14 years, had never shown signs or symptoms of cardiac disease. October 11, 1895, the author was called to see the patient and found all the structures of the throat intensely red and dry. Pulse 108, temperature 102.5°. Over the heart a loud, musical systolic murmur that persisted after the angina had disappeared. A month and a half later there was present at the apex a loud, clear cut systolic blowing murmur, well transmitted to the left axillary region.

The third, fourth and fifth cases were very similar. In all, the mitral murmurs persisted after the complete disappearance of the angina.

Tonsillitis as a cause of endocarditis is but rarely mentioned in text-books and monographs. Most writers speak of tonsillitis as one of the rheumatic series and note the possible association of any two of the series apart from any articular manifestations. The author is more inclined to look upon tonsillitis as an infection (which it undoubtedly is) and to view the endocarditis or the arthritis alone or in combination as the direct result of the entrance of micro-organisms through the tonsil or pharynx.

In support of this view the fatal case of tonsillitis reported by Chavrin (*La Semaine Med.*, 1897, page 105) may be recalled, where at the autopsy the staphylococcus aureus was found both in the tonsils and in the vegetations on the valves of the pulmonary artery. The value of Packard's report is much diminished by the fact that no bacteriological examinations were made in his cases.

Reaction of Diabetic Blood Toward Anilin Stains.

Hartwig (*Archiv f. Klin. Med.*, 62) confirms the statements of Bremer that diabetic blood reacts differently toward anilin stains than normal blood. He, however, ascribes this phenomenon to the increased amount of sugar in the blood, whereas Bremer believes it to be a test for diabetes itself, and equally positive whether at the moment sugar is present in the urine or not.

TAUSSIG.

OPHTHALMOLOGY.

A Case of Glaucoma Chronicum Simplex in a Girl 13 Years of Age, Evidently Induced by the Instillation of Atropine.

Alt (*American Journal of Ophthalmology*, September, 1899) reports the case of a girl, 13 years of age, with the following history. Five years previous to consulting him the mother took the girl to see an oculist on account of asthenopic symptoms, who, in order to test

her refraction, instilled atropine. Almost immediately the left eye became blind and ever since its pupil has remained dilated, *ad maximum*. Vision in right eye never was as good after the instillation of atropine, and is constantly failing.

Present condition: O. S., V.=0. Pupil dilated *ad maximum*. A few enlarged episcleral veins, T.+2. Myopic, with a very deep glaucomatous excavation. O. D., V. with — 1 D s. \subset — 0.75 D. c. ax. 90° = $^{20}/_{100}$. Pupil very large and reacts sluggishly to light, T.+1. Field reduced to an oval, with the largest diameter horizontally, beginning almost at the macula lutea. Within the field and near the macula a small relative scotoma of a diameter of about ten degrees could be made out. The papilla showed a glaucomatous excavation, but not quite peripheral and not as deep as in the other eye.

Extirpation of the Lachrymal Sac and Gland.

Holmes (*Archives of Ophthalmology*, January, 1900) believes in conservative surgery so long as a permanent cure is obtained in a reasonable length of time. Our first duty in tear-sac affections is not to slit the canaliculus and begin probing, lacerating, or bruising a delicate and inflamed mucous membrane, but to give careful attention to the nose and accessory cavities, massage, and gentle syringing of sac with mild astringents.

The indications for removal of sac and gland are:

1. In cases where it becomes necessary to operate on globe if there is not time to carry out other methods of treatment.
2. In patients who can not devote the time or may be unable to endure the treatment by probing.
3. In all cases where conservative treatment has failed to cure within a reasonable time.

Follicular Conjunctivitis and Ecchymosis of the Conjunctivæ Caused by Long Continued Use of Cocaine.

W. Kaster (*Ophthalmic Review*, February, 1899) reports a case of follicular conjunctivitis caused by the prolonged use of cocaine and cured by discontinuing its use. The peculiarity is the presence of follicles in the upper part of the conjunctival sac and especially on the

taisus. In the eye, cocaine no doubt acts in the same manner as in the nose, causing vasomotor paresis with consequent congestion. After the prolonged use of cocaine, the blood-vessels of the conjunctivæ grow weaker and small points of conjunctival hemorrhage frequently occur.

Blindness as a Result of Tabes Dorsalis.

Grosz (*Ung. Med. Presse*, July 20, 1899) examined the eyes of 101 cases of tabes, and examined histologically the optic nerve in 12 cases. The first stage with good central vision can remain for a long time; in the second stage the vision decreases rapidly. The affection is of a progressive nature and always leads to blindness. The peripheral limitation of the visual field, and the difference existing between both eyes, indicate that the main seat of the affection is to be found in the part of the optic nerve which lies in front of the decussation. In view of this fact, the atrophy (histologically) decreases as we go upward from the eye, and the author succeeded in demonstrating that the marginal nerve-fibers showed the highest degree of atrophy. According to Grosz the origin of the affection of the optic nerve is to be found in the ganglion layer, and the atrophy of the optic nerve is a symptom co-ordinate with the changes in the spinal cord, the same poison which causes the degeneration of the central nervous system, causes also the degeneration of the optic nerve. The poison is transmitted by the blood-vessels and all the symptoms indicate that syphilis plays, directly or indirectly, the main part in the causation.

The Effects of Influenza on the Eyes.

Oppenheimer (*N. Y. Medical Journal*, August 12, 1899) reviews the literature on this subject and finds the following list of eye complications in influenza: Abscess of the lid, herpes zoster of the lid, hæmorrhage into the conjunctiva, catarrhal conjunctivitis, croupous or diphtheretic membranes on the conjunctiva, serpiginous ulcers, sub-conjunctival abscesses, keratitis dendritica, punctata and suppurativa keratitis parenchymatosa, herpes cornea, stenosis of lachrymal duct, purulent dacryocystitis, episcleritis, suppurative and non-suppurative tenonitis, orbital cellulitis, iritis, irido-choroiditis and irido-cyclitis.

purulent and non-purulent, septic hæmorrhagic retinitis, retrobulbar neuritis and neuritis intraocularis, hemianopsia, chromatopsia, paresis of the external and internal ocular muscles and of the sympathetic, and attacks of acute glaucoma.

The attacks of glaucoma in patients so predisposed, the author attributes to the lowering of strength during and after an attack of influenza and not to a specific cause. He thinks the same is true in paresis of the eye muscles, while changes in the blood are responsible for hæmorrhages in different parts.

Purulent uveitis, orbital cellulitis, panophthalmitis, etc., are considered to be caused by emboli containing pyogenic cocci.

Albuminuric Retinitis as an Element of Prognosis in Bright's Disease.

Rogers (*Ophthalmic Record*, March, 1899) tabulates fifteen cases, all of which had been under observation at least two years. One is still living. The result of statistical study is that about seven patients out of ten who develop albuminuric retinitis during the course of either of the three forms of chronic nephritis will die within a year, and nine out of ten within two years.

SHOEMAKER.

PEDIATRIC PROGRESS IN 1899.

Gruels as Diluents of Cow's Milk.

Several American pediatricists have written essays on the value of gruels as diluents of cow's milk. Jacobi has recommended barley water or rice water as a diluent for cow's milk for many years, but not until recently have pediatricists paid any particular attention to such a mixture.

Certain very efficient proprietary foods have been known to contain starches, dextrin and maltoses, but the actual import in infant feeding has remained obscure. It seems certain now that even the youngest infant can assimilate a certain amount of starch, particularly in the form of dextrin. This prevents the casein from coagulating into

hard curds, and facilitates the diffusion of the gastric juice through the coagula. Furthermore, the antifermentative action of starches, dextrin and maltose is exceedingly valuable in the great variety of dyspeptic disorders of infants.

Chapin has especially studied this subject, and in several articles during the year has put the practice on a firm footing. The suggestion to predigest the starches by means of amylolytic enzymes will meet with great favor and promises important results.

Laboratory Milk in Infant Feeding.

The feeding of infants with laboratory milk is not meeting with the success that was anticipated on therapeutical grounds. Several American pediatricists do not use it at all; while most agree that it has special advantages, but admit that its use has limitations and certain disadvantages.

Starr, in a recent article, tries to solve the question why laboratory milk should disagree when a similar mixture of milk modified at home gives good results. We can not accept that the imperfect fat emulsion in laboratory milk is the only explanation available. The age of the milk must also be considered, and it must be remembered that the adjustment of the strength ingredients, the percentage of proteids, fat and sugar is exceedingly difficult, as no rules of any great value have as yet been devised.

Hemorrhagic Diseases of Infants.

The subject of hemorrhagic disease in infants has only been rendered more obscure by the report of cases by Kilham and Marcelis. It seems that a great variety of micro-organisms may be the exciting cause of this disease. It is gratifying to note that many cases get well, and a hopeless prognosis should not be given.

Typhoid Fever in Infancy.

Two articles on typhoid fever in infancy—one by Griffith and the other by Jacobi, have drawn attention to the fact that this disease does not occur in the first few years of life, but is usually overlooked. To the rule that this fever has a very mild type in childhood, numerous

exceptions occur, and even severe and fatal hemorrhages are by no means uncommon. Contrary to what might be expected, cerebral symptoms are more uncommon than in adults. The results of hydrotherapy are very gratifying.

Malarial Fever in Infancy.

The study of malarial fever has received a valuable addition by the article of Moncorvo, but we are not sure that the severe gastroenteric disorders mentioned by him have not been confused with other varieties of infection; still, in all fevers of infancy, malaria must be continually in our minds and evidences sought for. But nothing but a careful examination of the blood and the demonstration of the plasmodia should be received as positive evidence. Only recently an infant, 4 months old, who had high, irregular fever, with some gastroenteric symptoms came under our care; the liver and spleen were enlarged; the symptom complex tallied very well with that laid down with that laid down by Moncarvo, and yet repeated examinations of the blood revealed no plasmodia. The infant recovered without quinine.

Dyspnea with Tubercular Meningitis.

A peculiar and intense form of dyspnea seen in connection with tubercular meningitis is reported by Chapin, and this occurred without any particular changes in the lungs.

Incontinence of Urine in Children.

Incontinence of urine in children is treated very successfully by Freyberger with the fluid extract of *rhus aromatica*. The dose is five to ten drops for children under 5 years of age. The average duration of treatment was forty days.

Infantile Tuberculosis from Milk.

Milk as a source of tuberculosis in infants and children has been shown to be rare. The prevention of tuberculosis in children must be accomplished by attention to the purity of the atmosphere and cleanliness in surroundings.

Diagnostic Signs of Measles.

Measles has become noted by the fact that many special signs are now connected with its diagnosis. Koplik's enanthem is now firmly established as exceedingly valuable, but the constancy of its presence is doubtful. The sign of Bolognini—a peculiar friction sensation, felt when gently rubbing the tips of the fingers over the surface of the abdomen with gradually increasing force, has been shown by Koeppen to be due to the catarrhal state of the intestine, and present in about 50 per cent of the cases. The sign is also found in certain digestive disorders not dependent on measles.

Hypoleucocytosis is present in measles and forms a valuable differential sign. A catarrhal fever with gradual diminution of the leucocytes would be pathognomonic. Recently a gradual loss in weight before the appearance of any constitutional symptoms has been given as a constant and valuable sign.

Cream as the Habitat of Bacteria in Milk.

Freeman has made the important discovery that cream rising to the top of milk carries the bacteria with it and about 99 per cent of them are removed from the milk. While he admits that the bacteria grow best on top of the milk, he believes that just as alum by precipitation carries down impurities in water, so the fat by inverse precipitation carries bacteria upwards.

ZAHORSKY.

SURGERY.**A Brief Summary of the Indications for Operations on the Stomach.**

Max Einhorn (*Medical News*, November 25, 1899) mentions the various operations that are performed and gives the indications for each one separately:

Gastrotomy is done (1) for the removal of a foreign body whose contour renders the tissues liable to injury; (2) for the same when too large to pass the pylorus; (3) for inspection of the mucous membrane.

Gastrostomy is indicated when there is interference in the introduction of food to the stomach by the natural channel.

Pyloric divulsion, *Pyloroplasty*, and *Gastroenterostomy* are necessitated in cases where the usual outflow of the stomach contents is seriously impeded. The two first-mentioned procedures being employed only in benign strictures of the pylorus, the third being the remedial measure employed for stagnation due to other causes.

Partial or total resection is, as Einhorn aptly remarks, "always indicated for malignant growths, but, unfortunately, not always feasible or possible."

Gastrolysis, or separation of perigastric adhesions, is properly done when they cause serious symptoms.

Gastroplication, which means the folding and sewing of the stomach walls together, has been suggested in dilation without stricture.

Gastropexy might possibly be employed in gastropnoia.

The author makes one especially pertinent remark, viz., is isochymia is not benefited by medical treatment and liquid diet, then an operation alone can prevent a fatal issue—this for non-malignant cases. He considers that the affection, when the result of malignant disease, should be sufficient ground for operation as soon as an absolute diagnosis can be made.

A Modified Procedure for the Radical Cure of Varicosities of the Internal Saphenous Vein.

R. S. Fowler (*Brooklyn Med. Jour.*, December, 1899) combines Trendelenburg's and Casoti's operation, both of which have been slightly modified. The former consists in ligation of the internal saphenous where it joins the femoral; the second in excision of the vein in one piece, this being rendered possible by isolation through four short incisions distributed over the course of the vessel. His results were different in the individual cases—many patients being cured.

In a few cases Fowler has practiced subcutaneous extirpation of the external as well as the internal saphenous, with marked success in each. He makes use of one praiseworthy precaution before every operation, viz., elevate the leg until the veins are empty, then com-

presses the saphenous at the femoral fold, and allows the patient to stand, if now the dilated vessels refill in spite of the compression, he refuses to ligate the same.

The Technique of Gastro-Enterostomy.

Max Rutkowski (*Centralbl. f. Chir.*, September 30, 1899) after mentioning various methods of performing this operation as well as the faults of each, describes a procedure which is certainly novel and one which would seem to obviate, in a great measure, the unwelcome features which have rendered the mortality so high at the hands of the best operators. He does the ordinary gastro-enterostomy of Wölfler, and then through a small opening in the stomach wall thrusts a rubber tube into the intestine by way of the new communication. The free end of this tube is then carried out through the abdominal wound and a gastrostomy made according to Witzel or Kader. The method has two decided advantages—it permits of the patient being fed immediately after the operation, and insures against flow of food into the wrong intestinal loop.

A Thousand and One Laparotomies.

Nothing can be of more actual value to the abdominal surgeon than the study of such a report as this, by the Moscow gynecologist, Professor v. Sneguireff (*Revue de Chirurgie*, No. 9, 1899). Of these 1001 cases 98 died, many of them not as direct cause of the operation, so that the death rate can not be termed high in any event. The highest mortality being in hysterectomy, viz., 17 per cent, and the lowest, in gynecological work, 3.7 per cent, in unilateral removal of tube and ovary.

Thirty-nine cases died as the result of septic peritonitis alone. This work was done in nine years, the largest number of operations in any one year, viz., 118, being performed in 1895. The most efficient aid which the surgeon has in combatting infection is, in the author's estimation, the autoplasmic treatment of all stumps and denuded surfaces. Catgut ligatures were mentioned as a cause of infection, and are no longer used by this operator. He no longer uses or recommends sea-sponges.

On secondary post-operative hernia the writer does not seem to advocate the modern idea that faulty innervation (after dividing a muscular branch) with consequent muscle atrophy is the essential factor at work, but mentions prominently the location of the incision, and the method of suturing in this connection.

Irrigation with saline solution is advocated, as is gauze drainage to prevent infection. This article may not be fully appreciated until one reflects that it is only through the study of results in such a profession that the operator can become possessed of that rare judgment which is alone able to make him, in the highest sense, a successful member of the profession.

Alcohol Narcosis.

Matthaei (*Centralblatt fuer Chirurgie*, December 2, 1899) considers that the heart of an alcoholic patient is not so much endangered by this form of narcosis as is the case when chloroform and ether are used. But alcohol boils at 78° C., so it must be heated to 50° or 60° C., that we may obtain enough vapor (impossible at ordinary temperatures). The especial apparatus has air forced through the fluid continually. Narcosis of rabbits was hastened greatly by rectal injection of from 3 to 5 c.cm. of alcohol in from 10 to 15 c.cm. of water. The author ingeniously suggests that a drunken man on whom an operation must be done at once is, in view of the foregoing sentence, the best subject for alcohol narcosis. On account of the obvious difficulties in carrying out the method, one can hardly feel warranted in bespeaking for its general acceptance.

A Simple Palliative Operation for Cancer of the Stomach, Where Removal is Impossible.

Martin (*University Medical Magazine*, November, 1899) laid a No. 40 sound upon the anterior surface of the first part of the duodenum, the wall of the gut was drawn over it, and an oblique duodenostomy thus made. Intestinal and parietal serosæ were united with rapid healing as a result. The patient gained rapidly in weight as a result of feeding through the tube with artificial foods.

BARTLETT.

BOOK REVIEWS.

Refraction and How to Refract. By JAMES THORINGTON, A M., M.D., Adjunct Professor of Ophthalmology in the Philadelphia College for Graduates in Medicine; Assistant Surgeon at Wills' Eye Hospital. Octavo, 301 pages; with 200 illustrations, 13 of which are colored. 1900. Price, cloth \$1.50 net. [P. Blakiston's Sons & Co., Publishers, Philadelphia.]

A systematic treatise that will be appreciated by the general practitioner and beginners in the study of ophthalmology. The work includes sections on Optics, Retinoscopy, the Fitting of Spectacles, Eye-Glasses, etc.

SHOEMAKER.

Operative Surgery. By JOSEPH D. BRYANT, M.D., Professor of the Principles and Practice of Surgery, Operative and Clinical Surgery, University and Bellevue Hospital Medical College; Visiting Surgeon to Bellevue and St. Vincent Hospitals; Consulting Surgeon to the Hospital for Ruptured and Crippled, Woman's Hospital, and Manhattan State Hospital for the Insane; Fellow of the American Surgical Association; Former President of the New York Academy of Medicine; President of the New York State Medical Association, Etc. Vol. I.: General Principles of Surgery. Anesthetics, Antiseptics, Control of Hemorrhage, Treatment of Operation Wounds, Ligature of Arteries, Operations on Veins, Capillaries, the Nervous System, Tendons, Ligaments, Fascia, Muscles, Bursæ and Bones, Amputations, Deformities; Plastic Surgery. This volume contains 749 illustrations, 50 of which are colored. Price, Cloth, \$5.00. [D. Appleton & Co., Publishers. New York.]

Bryant's Operative Surgery needs no introduction, it is a standard work on that subject. This, the third edition, is far in advance of those of previous issues and its pages reveal at a glance the wonderfully rapid progress that has been made in the art of surgery in the past few years. This book, the work of a master hand, is thorough and complete in every particular, and the modest hope of its writer that the reader will find in its pages sufficient of interest and importance to justify the use

of the time employed by himself and the author in their consideration will be more than fulfilled.

The first chapter is devoted to the general consideration for operative surgery. This is replete with wholesome advice in regard to many matters that are often regarded of trivial importance and too frequently ignored. Each subject is treated of in a thorough and exhaustive manner, that of the surgery of the brain and nervous system especially so. For operation upon the Gasserian ganglion for trifacial neuralgia the various methods of Rose, Hartley-Krause, and Doyen are described in detail. Horsley's intra-dural operation, he says, is a bold conception which appears to be needlessly dangerous for the purpose and even unnecessary in view of the results and the increased thoroughness of removal by the extra-dural methods, and is dismissed in a few words.

The subject matter has been so well treated of that it is difficult to select, as better than another, some part for special mention. The illustrations are excellent, many of which are colored plates and half-tones; they greatly enhance the value and usefulness of the work.

The work is dedicated to the graduates in medicine who have been his students.

DUDLEY.

The Principles and Practice of Medicine. Designed for the Use of Practitioners and Students of Medicine. By WILLIAM OSLER, M.D., Fellow of the Royal Society, Fellow of the Royal College of Physicians, London; Professor of Medicine in the Johns Hopkins University, and Physician-in-Chief to the Johns Hopkins Hospital, Baltimore; Formerly Professor of the Institutes of Medicine, McGill University, and Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia. Third Edition. 1899. [D. Appleton & Co., Publishers, New York.]

Since its first appearance Osler's work has been accepted by the profession as a standard treatise on the principles and practice of medicine and is *facile princeps* of the books on that subject in the English language. Owing to the rapid advancement made in the progress of medical science, a text-book quickly outlives its usefulness unless kept abreast by revision at intervals of several years. This the author has accomplished and the present, third edition, is as complete and up to-date as is possible to make it. The revision has been very thorough, many of the articles have been entirely re-written and new ones added. The bubonic plague, which is attracting the attention of the medical world in the East, has been appropriately described and

treated of. The gonorrheal infection, a subject that hitherto has been left to works on genito-urinary diseases, has very properly been given a place in its pages; likewise also malta fever, leprosy, glandular fever, diseases of the thymus gland, lymphatism, erythro-melalgia, ether-pneumonia, pneumaturia, and other hitherto poorly understood conditions have been thoroughly and lucidly described. It is undoubtedly the best practical work on the subject in the English language.

SMITH.

The Modern Treatment of Fractures. By JOHN B. ROBERTS. A.M., M.D., Professor of Surgery in the Philadelphia Polyclinic; Mütter Lecturer on Surgical Pathology of the College of Physicians of Philadelphia. With 39 illustrations 1899. Price, Cloth, \$1.50. [D. Appleton & Co., Publishers, New York.]

This little book upon the treatment of fractures is the resultant experience of one who has had extensive opportunities during many years of surgical work. It is a clear, concise exposition of the subject and replete with practical common-sense ideas regarding the management of such injuries. No injuries require more careful and judicious treatment than fractures; and in no branch of surgical therapeutics is the exercise of common sense followed by more satisfactory results than in the treatment of these lesions, is well said by the author in his preface. Under the heading, false doctrine in the treatment of fractures, he deplores the too generally accepted idea that every fracture of the extremities should be treated by a special splint or apparatus, losing sight of the fact that treating a fracture is a simple mechanical problem capable of solution by any device that will secure correct apposition and immobilization. He also says that splints and dressings are often continued too long and that with a supportive dressing of gypsum or silicate of sodium is used the patient can go about on crutches at a much earlier period than in generally allowed. Likewise, he advocates the employment of massage used with discretion during the entire period of treatment of a fracture for the purpose of lessening the rigidity of muscles, stiffness of joints, inflammatory infiltration, etc., around the seat of fracture.

Some of the views of the author may be regarded as too radical, but on the whole it is an extremely valuable little work and one which should be extensively read by the general practitioner as well as the surgeon.

DUDLEY.

NOTES AND ITEMS.

The Tri-State Medical Society of Illinois, Iowa and Missouri will hold its next meeting April 3 and 4, 1900, in this city.

The Medical Society of the State of New York at its ninety-fourth annual meeting, recently held at Albany, elected Dr. A. M. Phelps, Professor of Orthopedic Surgery in the Post-Graduate Medical School, President for the ensuing year.

Marine Hospital for Honolulu.—The President has issued an order setting apart seven acres, more or less, out of the Government reservation east of the "Punch Bowl," in the island of Oahu, Hawaii, as a site for a United States Marine Hospital for the port of Honolulu.

Dr. S. Weir Mitchell's New Story.—Dr. Mitchell's new novel, "Dr. North and His Friends," will begin its career as a serial in the March *Century*. It is said to present under the cloak of fiction many of the actual scientific observations and phenomena that have come to the Doctor during his long career as physician and man of letters.

The Marriage of our associate editor, Dr. Elsworth S. Smith and Miss Grace Platt, daughter of Mrs. Elizabeth Williamson Platt, of St. Louis, was solemnized at the residence of the bride's mother, Wednesday, February 21, 1900. To our esteemed associate and his charming bride we extend our best wishes for a long and happy life together.

The Plague is believed to have been arrested in Honolulu by the extensive fire in the Oriental quarter, no new cases having appeared during the eight days preceding February 2, the date of the last advices. In all there were 46 deaths. Ten other blocks outside of Chinatown were burned by order of the Board of Health, and about fifty isolated buildings were also destroyed. Following the destruction of Chinatown and other similar places the number of deaths from all causes fell off remarkably. The work of inspection was most thorough. The Sanitary Committee divided Honolulu into forty inspection districts, with a volunteer inspector in charge of each. Each district was divided into sections or apanas, each containing from 75 to 150 inhabitants, and a volunteer sub-inspector was placed over each. Each sub-

inspector went over his apana twice a day, and personally saw each inhabitant, reporting every case of illness, however trivial, to the Board of Health, which sent a physician at once, and if any plague symptoms were discovered the patient was isolated, and all who had come in contact with the premises were quarantined.

In Manila the disease is reported to be gaining headway. It is said that this is the first visitation of plague the city has ever had. It was undoubtedly brought from Hong Kong, where, during 1899, there were 1,486 cases with 1,428 deaths.

In Bombay the conditions are growing worse owing to the influx of famine sufferers, who present a fertile soil for disease of every kind. The number of deaths in that city in one day, the last week in January, was 408, not all from the plague, however.—*Medical Record*.

A Lay Appreciation of the Surgeon's Labors.—The *Army and Navy Journal* for January 6, 1900, in an editorial on the bill to increase the medical department of the army says :

We are coming nearer every year to the true appreciation of the heroic part of the surgeon's labor. We are more clearly seeing that the hand that weilds the alleviating scalpel, or administers the soothing potion, may strike as nobly for victory as the colossal figure striding up and down the firing line. During the epidemic of fever in the Spanish war, our surgeons worked day and night, debilitating their systems until in many cases they themselves fell victims to the disease. Those were sacrifices of patriotism not the less noble because made without the stimulus of momentary excitement and for the salvation of others. Perhaps it would not be altogether unfortunate if the bill should cause some debate in Congress, to the end that the champions of our army surgeons might place before the country the real service they have done and a greater service a wise provision now will enable them to perform in the greater days to come.

No training so nearly simulates the soldier's as that of the medical profession. The doctor must at all times hold himself in readiness for the call of duty, as the soldier does, and must, like the soldier, accept without complaint or hesitation the risk to life and health attending the discharge of duty. It is not alone on the field of battle that the medical man runs these risks. They come to him in the course of an ordinary medical practice; he must often go where he will permit no one else to go, because of the danger of infection from deadly disease. The record of army surgeons, from the days of Napoleon's Baron Larrey until now, has been one that honors their profession and dignifies humanity.

ST. LOUIS

COURIER OF MEDICINE.

VOL. XXII.

MARCH, 1900.

No. 3.

ORIGINAL CONTRIBUTIONS.

Ectopic Gestation.

By **EGBERT H. GRANDIN, M.D.,**

NEW YORK CITY,

GYNECOLOGIST COLUMBUS HOSPITAL, ETC., NEW YORK.

TRITE as is this topic, there appears to me justification for again dwelling upon it, since, notwithstanding its wealth of literature, the general practitioner too frequently mistakes the diagnosis or sends for the expert too late for operation to be of avail. Not that I would be understood as considering the diagnosis an easy matter to make, for I am satisfied from ample experience that usually the diagnosis is often only strongly presumptive. Such strong presumption, however, warrants exploratory section for certitude, and condemns absolutely expectancy with its frequent sequel—death.

This question of diagnosis being so all-important, little need to beg pardon for dwelling on it with renewed emphasis, for the symptomatology is by no means as definite as has been taught; indeed, the fact has been impressed on me again and again that many of the so-called cardinal symptoms may be lacking.

One of the symptoms is stated to be "amenorrhea in a woman previously regular followed by irregular bleeding."

This is a valuable symptom because the amenorrhea is suggestive of pregnancy and bleeding during pregnancy being inconsistent with the normal the case demands careful examination. I have seen, however, a number of cases of which the following may be taken as the type :

A young woman, married a number of years ; sterile ; no precedent history of ovarian or tubal disease. Has been subjected to curettage for chronic endometritis. Menstrual type every three weeks, rather profuse. Was requested to see her in consultation because of "colicky" abdominal pains. Secured a history of no abnormality in menstruation except that the last period had been markedly less than usual. On examination the uterus was determined movable, not specifically enlarged, the right tube enlarged and congested. Being able by exclusion to rule out other causes for the "colicky pains," I suggested exploratory vaginal section which revealed hemorrhage in the pelvic cavity. Immediate abdominal section enabled me to remove the ruptured tube containing chorionic villi and also the vermiform appendix which was diseased and adherent to the tube. The woman recovered.

In this case not alone was precedent amenorrhea lacking, but also *enlargement of the uterus*—another of the so-called cardinal symptoms on which stress is laid. And whilst referring to this second "symptom" let me relate the following case :

A woman, married a number of years ; sterile. Had been curetted a few months previously for endometritis, and at this time the left ovary was enlarged, tender and prolapsed. She passes a menstrual period by one week and has repeated attacks of abdominal pain. I was requested to see her and found a mass presenting in the left fornix vaginæ, soft and congested. The uterus was not enlarged. I made a presumptive diagnosis of tubal gestation and suggested examination under anesthesia. About eight hours afterwards, under an anesthetic, it appeared to me and the colleagues with me that after all we were not dealing with an ectopic gestation, but rather with an enlarged cystic ovary. The crises of abdominal pain, however, had made such an impression on us, and very fortunately so, that we concluded to make an exploratory vaginal section. This

revealed free blood in the peritoneal cavity. Immediate abdominal section enabled the operator to remove the ruptured left tube and to cleanse the peritoneal cavity of blood and of clots. The woman recovered.

In a somewhat similar case, also seen in consultation, operation was deferred until there was something more than "presumption" and when section was finally resorted to and the abdomen found full of blood and old and recent clots the diagnosis was established but the woman died. Diagnostic vaginal section thirty-six hours previous might have saved the woman by establishing the diagnosis in time for radical operation to have been of avail.

So far the point made, it appears to me, is: In the presence of "colicky pains" of an obscure nature, associated with a tumor in one or another fornix vaginæ, even though precedent amenorrhea and irregular hemorrhages have not occurred and uterine enlargement be lacking, make an exploratory vaginal section for diagnostic purposes. Repeated "colicky pains," should the condition be ectopic gestation, mean primary rupture, and no matter how slight the rupture, this entails the presence of blood in the lower peritoneal cavity, barring encapsulation of the tube through long standing plastic deposit and barring rupture between the layers of the broad ligament.

These "colicky pains," however, are by no means determinate, except, of course, when they are associated with the clear, classical history of ectopic gestation. I have operated a number of times expecting to find this condition only to relieve the woman of an ovarian abscess or a pyosalpinx. But these operations were never regretted by me because they eventuated in removing diseased organs even though the condition was different from that diagnosed, and then again, I long ago made it my rule of action that a clean cut was preferable to expectancy when there existed the faintest presumption of ectopic gestation. "Colicky pains" again may never be prominent and yet ectopic gestation may exist. Here are two illustrative cases:

I was requested by a colleague to assist him operate in a case where menstruation had always been of irregular and not profuse type and where the enlargement of the uterus was

considered due to a chronic metritis. Operation was demanded by the presence of a large fluctuating mass determinable in front of the uterus and causing vesical symptoms from pressure. We found the right tube distended with blood containing a placenta in the formative stage, that is to say, about the eighth week.

The second case, a personal one, was that of an unmarried lady, 40 years of age, who complained of menorrhagia and severe pain (constant) in the right abdomen. The uterus was enlarged two fingers above the pubes, and masses of an indeterminate nature occupied both broad ligaments. Abdominal section revealed a fibroid uterus, a large pyosalpinx embedded in adhesions on the right side, a tubal pregnancy on the left side (this diagnosis being certified to by the presence of a well-developed chorion). Total hysterectomy cured the woman. Here there were no symptoms of ectopic gestation and my knowledge of the lady had never caused me to question her chastity.

The last case I dwell upon is of peculiar interest, seeing that all the symptoms prominently associated with ectopic gestation were present and yet the condition was absent.

A young woman, six months married, had an attack of "colicky" abdominal pain whilst on her way from Chicago to this city. A hypodermatic injection of morphia administered by a physician on the train quieted her. On her arrival in New York I was consulted because of renewed pain. I secured a history of irregular menstruation (four to six weeks cycle, moderate in amount, associated with considerable "bearing down" pain). Her menstrual period she deemed imminent. On local examination the uterus was enlarged and soft, a sensitive pulsating mass lay in the left fornix vaginæ, whilst the right was occupied by an exudate. I placed the woman in bed and told the husband that after the menstrual period I should advise operative interference. During the next ten days she had occasional crises of abdominal pain which were quieted by codein suppositories (gr. ijss). Forty-two days after her last menstrual period (one week beyond the anticipated date) she started to flow profusely, passing clots and suffering great "colicky" abdominal pain. I happened to be

out of town and could not reach her for twenty-four hours, when the pain and the flow had ceased, but the woman's condition was critical; pulse rapid and thready, facies anxious, the mass in the left fornix larger and yet more diffuse. I made a presumptive diagnosis of ruptured left ectopic gestation and operated within a few hours. The uterus was first curetted with negative result, and on abdominal section I removed a large pyosalpinx and ovarian abscess from the right, and a leaking pyosalpinx from the left side. The woman recovered.

Now here I had the following points in favor of ectopic gestation: Amenorrhea (relatively seven days beyond the expected period), enlarged uterus, "colicky pains," hemorrhage, the presence of a soft, pulsating tumor in the vaginal fornix. Yet, the condition found on the operating table in nowise corroborated the clinical diagnosis.

Other cases of interest might be noted but enough has been written to enable me to lay down the following deductions:

Whilst the diagnosis of ectopic gestation is usually difficult owing to the varying clinical history, as a rule it may be reached with sufficient exactitude to warrant exploratory vaginal section. This procedure will always confirm the diagnosis where primary rupture has occurred and is far less dangerous to the woman than is expectancy. I would counsel exploratory vaginal section in every case where the clinical history suggests in the least the possibility of ectopic gestation. Where precedent amenorrhea is followed by hemorrhage we know at once that we are not dealing with normal pregnancy; if, in addition, the woman have "colicky" pains, we should never forget that these are symptomatic of primary rupture should ectopic gestation exist; if, further, ordinarily under anesthesia, what appears to be an enlarged and congested tube is determined by combined vaginal and rectal examination, the indication for operation is stringent. Even though the result of our operation be the negation of our diagnosis, we remove a diseased organ (possibly an ovarian abscess or a pyosalpinx) from the woman and in so far she is the better off while our consciences are clearer than if we withhold our hands until the diagnosis is cleared through operation forced

upon us on a dying woman. In fully forty cases of ectopic gestation (one bi-lateral) seen by me in consultation the only instances dying have been two where over-caution (another word for timidity) postponed operation until it could be of no avail. To repeat: "*A clean cut is safer than expectancy*" has been my rule for years and I have yet to regret it.

[36 East 58th Street.]

A Case of Secondary Post-Partum Hemorrhage.

By L. E. NEWMAN, M.D.,

ST. LOUIS, MO.

Read before the St. Louis Medical Society, February 10, 1900.

WRITERS on surgical subjects never fail to give the subject of secondary hemorrhage considerable attention, both as regards symptoms as well as the appropriate treatment therefor; but on the other hand, the authorities on obstetrics, truly a collateral branch of surgery, almost invariably pass over the topic of late hemorrhages occurring during the puerperium with but a few words. Primary hemorrhage, post-partum, is invariably looked upon as one of the most frightful and appalling disasters which can happen to the lying-in woman, and its proper management is of the greatest importance; as on it depends the life or death of the patient. It is here that coolness and prompt and efficient action and skill must be used; for the sight of having a patient, who a few moments before was well and happy in consequence of the happy termination of labor, is indeed frightful.

Primary post-partum hemorrhage is an accident common enough, unfortunately, to make us quite familiar with the awful sight of witnessing a patient rapidly and suddenly brought to the brink of the grave, unless we can secure complete and permanent contractions.

All of us in general practice have met with such cases,

and those of us whose lot it has been to have much to do with obstetrics can realize the terrible anxiety of those few moments when, after having emptied the womb of its contents, we wait and hope that the organ will remain contracted.

But the case which I am about to report has many unusual features, inasmuch as hemorrhage occurred on the ninth day after labor, without warning and without the slightest symptom having taken place during the puerperium to have made me suspicious or fearful of such a complication taking place. The text books to which I have had access in cursorily looking up the literature on this subject make but little mention of secondary hemorrhage after labor, and the tendency is to pass it over with just a few remarks about the necessity of removing any débris or remains of secundines by curetting or with the finger.

The number of cases is rare. This condition must not be confounded with recurrent hemorrhage, which takes place within forty-eight hours, and therefore we must understand that we are not dealing with retained placenta which of necessity is accompanied with more or less flooding.

The case I have to report is as follows :

J. P., 22 years of age, native of the United States, primigravida, came here from Leadville, Colo., in about the fifth month of her pregnancy. She had been a patient of mine before her marriage and I knew her to be of a decidedly neurotic temperament, besides being a bleeder, having had on one occasion great difficulty in arresting a hemorrhage occurring during one of her menstrual periods.

Her pregnancy was an ideal one and her health improved from day to day as she neared term. She was cheerful, color good, eyes bright, and appetite excellent. The emunctories were active, with the possible exception of a slight tendency to constipation which was readily overcome by the exhibition of a mild saline as occasion required. Although she lived in that part of the city visited by the cyclone, the pregnancy was not interrupted by her experience.

In the latter part of July, 1896, I was called to see her and found her in labor, os dilating nicely, and the vertex anteriorly and to the left. I shall not detain you with a long history of the labor, which went along very nicely, but had to be terminated with forceps on account of uterine inertia. It was a simple forceps operation and the head only required to be coaxed through the outlet. The placenta came away promptly

and was followed by some hemorrhage, but not enough to cause any alarm, and it was readily arrested by kneading the womb, which contracted nicely and remained so.

From this time until the ninth day the case was absolutely uneventful and at noon on the ninth day I made my last visit, as I supposed. During all this time her pulse had never gone above 80 and the temperature reached only 99.5° F. once, and that was on the third day.

You may imagine my surprise when I found a hurried summons awaiting me at about 3:30 of the afternoon of this same day, when I had left her so well that I told her she might sit up the next day. I could not imagine what had taken place, but took my obstetrical bag with me, not knowing what complication I might have to deal with.

On my arrival a truly horrible sight met my gaze and I recognized from the pale and anxious countenance, covered with clammy sweat, that I had a case of hemorrhage to deal with; and, if I expected to save my patient no time was to be lost, and then I remembered my experience of a few months before, when she had become almost exsanguinated at one of her menstrual epochs.

Hurriedly washing my hands, which even then were anything but aseptic, I made a vaginal examination and found the os wide open, and the uterus, which had not properly involuted, full of soft clots which I immediately turned out, and calling for ice, I inserted a good-sized lump into the womb and applied another to the hypogastrium, keeping one hand upon the fundus in an effort to stimulate the uterus to contraction.

The woman had fainted twice and had no radial pulse. Having for the moment secured contraction, I administered ergot hypodermically, and consciousness having returned, I proceeded to prepare to pack the womb; but this condition of consciousness lasted only a little while and she only had time to say that she was again flooding, when she went into another syncope.

I again resorted to the ice, and during the temporary checking of the bleeding, I got out my iodoform gauze, and after cleansing out the cavity thoroughly, I packed it tightly with the gauze and then firmly tamponed the vagina. I raised the foot of the bed some six inches and ordered my patient kept absolutely quiet and to send for me on the slightest reappearance of the bleeding.

I ordered the ergot given every two hours, and ice applied to the fundus if the bleeding should occur during my absence. She had a rapid pulse, and anxious countenance, due to both loss of blood and the excitement of saying farewell to her family, and when I left her that

afternoon I had grave doubts indeed as to her recovery. Her blood seemed to lack the power of coagulation and the mouths of the vessels in the flaccid uterus apparently remained wide open. I returned to see her at about 11 o'clock that night and found that though she had not fainted any more, she was still bleeding through the tamponade, which was as tight as it could be, and yet the blood was so fluid that it would ooze through the gauze.

On removing the tampon there was another gush of blood and again I had to resort to ice in the cavity in order to stimulate the uterine muscle to contraction and then I followed this with the packing of iodoform gauze. I kept up this treatment, together with the internal administration of quinine, iron, and ergot, for ten days; and each time I took out the gauze there was a gush of blood until the last two days, when it at last ceased, and then I discontinued the use of the tampon, although I persisted in the administration of the ergot.

Her temperature never reached quite the 101° F. mark, and there was not the slightest evidence of sepsis, which is strange, in view of the manipulations to which she was subjected without the sterilization of my hands on the occasion of the first hemorrhage.

Her recovery was interrupted by frequent minor hemorrhages, and she suffered greatly from the extreme heat of that summer,

Treatment consisted of ergot by the mouth and on two occasions hypodermically, besides the local treatment already referred to.

Cardiac weakness was controlled by strychnine and ammonia; and the nourishment consisted of the most concentrated of broths and milk.

Although her loss of blood was alarming, transfusion of normal salt solution was not practiced on account of the fact that it seemed to be contraindicated by the state of the vessels and would only have afforded occasion for more leakage; consequently it was not used, although I must say that I was sorely tempted to do so on more than one occasion.

There was not a particle of placental tissue or secundines left in the cavity after delivery, these having come away intact and carefully examined; and again when the hemorrhage took place a careful examination of the uterine cavity was made with the finger, an easy matter, on account of its flaccid state. Since this time the patient has had two experiences with hemorrhage, one from a cut finger, at which time I did not attend her; and the other time, eighteen months after her confinement, from an accidental abortion at ten weeks, when the flooding was exceedingly profuse but was controlled by ergot without a great deal of difficulty. I can, therefore, vouch for her being a bleeder.

Lusk gives the subject about a page, speaking of puerperal hemorrhage, *i. e.*, hemorrhages occurring after the first day.

Verrier gives the matter passing notice in these few lines, speaking of it as tardy puerperal hemorrhage: "This hemorrhage is never serious and is checked by the horizontal position and small doses of ergot which facilitate the return of the uterus to the size that it should assume after parturition." [To which sentiment I beg leave most decidedly to protest, after my experience cited above.]

Charpentier speaks of it as secondary puerperal hemorrhage; Cazeaux and Tarnier, secondary hemorrhage, and cite Madame Lachapelle, who mentions a case similar to mine.

"American System of Obstetrics" (Hirst) gives it less than a page, and speaks more particularly of late puerperal hemorrhage after the patient's lying-in is practically over. Playfair gives the subject more attention, and speaks particularly of the manner in which the subject is slighted by most writers. He cites McClintock, of Dublin, who has collected a number of cases of this kind.

It would be highly gratifying to hear of the experience of some of the gentlemen present in connection with secondary hemorrhage, post-partum, and whether they have followed my plan of treatment, or have any improvements or modifications to suggest.

There seems to be a tendency to pass slightly over this subject on account of its rarity, and yet it is certainly an accident of sufficient gravity to merit more extended notice.

I will mention, in conclusion, that in January of last year I delivered this woman of a child at term, and her lying-in was absolutely normal; but I took the precaution of keeping her on her back with the head low for two full weeks, besides giving her ergot during the entire puerperium and even then I did not feel safe until she had been up and about for several days.

[3024 Locust Street]

Rare and Interesting Surgical Cases.

By C. P. THOMAS, M.D.,

SPOKANE, WASH.

ONE year ago I reported in a local journal a few rare and interesting surgical cases which had occurred in my practice during the past few years. It is now my pleasure to add to that report another list of cases, which I select from my record book of this year, and which are to me of peculiar interest.

CASE I.—Mr. I., 60 years of age, suffering for six days from strangulated hernia. Was brought to the hospital in extreme collapse, and was at once operated. Six inches of bowel, gangrenous and perforated, were resected and the ends united with a Murphy button. The abdomen was closed with drainage, and the button passed the tenth day, patient leaving the hospital at the end of three weeks. The peculiar interest in this case is, that a recovery should have taken place after so many days of bowel strangulation.

CASE II.—Mr. E., 29 years of age, consulted me on the third day of a second attack of appendicitis; said he was in great pain, but was now comfortable. He was a spare-built man, and decided induration and tenderness was found over the region of the appendix. Temperature but 99° F., pulse 75, and he had walked five blocks from the depot to my office. Knowing that he expected to return to the Range, where he would be away from surgical aid, and following my usual custom, I advised immediate operation, to which he consented very reluctantly. On opening the peritoneum, the appendix was found to be gangrenous and perforated, with fecal matter pouring out into the general cavity. How this serious condition could be present and show so few symptoms is the matter of special interest to me. His recovery was uneventful, and is another nail in the coffin of medical treatment of appendicitis.

CASE III.—Mrs. B., 54 years of age, has suffered from repeated attacks of hepatic colic for the past ten years. This attack came on four days before, the pain continuing, notwithstanding she had received her usual medical treatment. When first seen by me she was in extreme pain, bowels obstructed and greatly distended, temperature 103° F., pulse 120. Operation was immediately advised, but refused

until the following morning. An incision over the gall-bladder was made which showed that organ ruptured, still containing ten stones, and pouring large quantities of bile and purulent matter into the general cavity. Thorough irrigation followed by drainage of both the general cavity and the gall-bladder, which was stitched to the peritoneal incision, was followed by immediate relief from obstructive symptoms and recovery promised. But on the fourth day uremia developed which caused her death.

I report this case because perforation of the gall-bladder from over-distention due to obstruction of the cystic duct is rare.

CASE IV.—Mrs. K., 56 years of age, had suffered for several years with abdominal distention which had been diagnosed ovarian tumor several times. Three weeks ago, following a fall, the tumor seemed to disappear, during which time she had profuse watery discharges with her feces. She was confined to her bed following this, and her distention began to re-appear, and continued to increase until she came under my care. She was purged thoroughly, but the abdomen remained enormously distended, so I made a median incision and found a large sac adherent to the colon near the sigmoid flexure. It was impossible to lift this sac out without emptying it, and upon plunging my trocar into it, I was greatly surprised to find it contained at least two gallons of fecal matter. The sac was emptied and its cavity communicated directly with the lumen of the colon. She was thoroughly irrigated, drained, and, after excising most of the sac, the deeper portion of it was stitched into the lower angle of the abdominal incision, her condition not permitting of a more complete operation. Death followed five hours later from shock.

This is the only case of which I have any record in which an ovarian cyst had re-filled with fecal matter after discharging into a bowel.

CASE V.—Mr. G., 68 years of age, was brought to me by a colleague, suffering from strangulated, right inguinal hernia, of eight hours' standing. On cutting down upon the bowel, it was found to be the head of the colon with the appendix gangrenous and perforated, the rest of the bowel slightly discolored. The appendix was removed, bowel returned, patient making the usual recovery.

CASE VI.—Master H., 16 years of age, came under my care on the fifth day of a first attack of acute appendicitis. Temperature 104° F., pulse 150, with persistent vomiting. Abdomen distended and

bowels obstructed. An incision over the appendix showed that organ gangrenous and perforated, with a partly circumscribed abscess at its base containing a pint of pus, with the general cavity literally filled with sero-purulent and fecal matter. The intestines were covered with lymph, and adherent everywhere. Several gallons of saline solution were used for irrigation, drainage with gauze and tubes in every direction, and the colon filled with saline solution. He was also given 30 c.c. of Marmorek's antistreptococcus serum, and after much anxiety and good nursing, recovered. This is the only case of general peritonitis that I have ever seen recover.

CASE VII.—Miss M., 15 years of age, was taken to the hospital to be operated upon for an abdominal tumor. Abdomen found greatly distended, bowels obstructed, temperature and pulse normal. A median incision was made and the general cavity found filled with blood. The uterus was as high as the umbilicus, the vagina considerably distended, and blood oozing from both tubes. Ovaries normal. It was then discovered that she had an imperforate hymen and that her abdominal symptoms were due to backward flow from the uterus. This backward flow had been sufficiently free to prevent much bulging of the hymen. Thorough irrigation and proper treatment of the hymen gave us prompt recovery. The abdominal cavity was not drained.

CASE VIII.—Mr. D., 35 years of age, was taken suddenly ill with intestinal obstruction symptoms which refused to yield to medical treatment. At the end of thirty-six hours he was submitted to a median incision which showed a greater portion of the small intestine distended with gas. A careful inspection of the entire gut failed to show the cause of the obstruction, but during the manipulation of the same the obstruction suddenly disappeared, permitting gas to pass freely through the collapsed portion, and the incision was closed without further knowledge of the cause of trouble. Recovery followed and he is still well at the end of six months.

CASE IX.—Mr. F., 58 years of age, came under my care on the fifth day of an intestinal obstruction. A median incision was made which showed a loop of bowel about twelve inches long completely strangulated and gangrenous. I was unable to learn the exact cause of this internal strangulation owing to the inflamed and distended condition of the bowel. A rapid resection with Murphy button anastomosis was made, but peritonitis was too severe and death ensued at the end of ten hours.

CASE X.—Mrs. A., 40 years of age, was first seen on the third day of almost complete obstruction of the bowels. She was anemic and showed great suffering. There could be felt, per vagina, in the

right ovarian region a hard indurated mass about as large as a man's fist. It was also found to be impossible to pass a rectal tube beyond this mass. A median incision was made, and the mass proved to be a malignant growth in the sigmoid flexure entirely closing the lumen.

After considerable difficulty, the bowel and mass were separated from the surrounding tissue to which they had become adherent sufficiently to permit their being raised well up into the abdominal incision. I then resected about six inches of the colon, including the diseased portion, and re-united the ends by a double tier of fine silk sutures, closing the abdomen with drainage. At no time was there any escape of fecal matter or gas from the bowel, and recovery was uninterrupted. Bowels moved freely at the end of six hours, and now, four months later, the patient declares herself as well as ever before in her life. I feel that in this case, should recurrence begin to-day, that our work had been entirely justifiable.

CASE XI.—Mr. R., 45 years of age. Following a low, protracted fever about four years ago, a pleural abscess developed, which was drained for a short time. Since then he has been a constant sufferer with cough, night sweats, and expectoration of blood and pus, with almost constant pain in the region of the liver and right lung. Abscess of the liver was diagnosed and an incision made over its median lobe. The liver was found securely attached to the peritoneum and the incision was continued through its substance until an accumulation of pus was found and drained by rubber tubing. The expectoration and cough disappeared, and the patient was greatly improved. It was found after he recovered from the anesthesia that air was escaping from the rubber tube and that water injected into this tube under slight pressure could be forced up through the lung and out of the mouth. He is still wearing the drainage tube, at the end of two months, and is regaining his flesh and health.

CASE XII.—Mr. N., 42 years of age, Scandinavian, developed a cyst in the region of the right side, probably hepatic, four years ago, which was tapped, letting out over a gallon of fluid. He presented himself to a colleague of mine a week before I saw him, with a tumor similar to the other one, which he desired to have tapped. Repeated attempts at tapping failed to bring the fluid, but instead caused an acute inflammation and symptoms of sepsis developed. I then operated on him in two stages, by stitching the sac to the peritoneum and then opening it three days later. I found then that the tumor was of echinococcus variety, and contained many hundred cysts, varying from the size of a pea to an orange. From the number and quantity

of cysts removed, it would appear that this tumor had destroyed the entire substance of the liver.

At first, bile flowed freely from the opening, but it soon ceased, recurring again at the end of two weeks for a day or two only. There was also pus among these small cysts, doubtless due to infection from the tapping. The patient's recovery was very slow owing to this sepsis, but he continued to improve until he had almost regained his original weight. There is, however, still a slight muco purulent discharge from the wound which I think will close after the sac has entirely collapsed.

I wish also to state that during the year I have operated for acute appendicitis on two men who were at the same time suffering from typhoid, at about the end of the first week. That in both cases, well-marked symptoms of appendix trouble were present, and were followed by recovery. In each of these cases I found decided enlargement and inflammation of all the mesenteric glands. This mesenteric glandular inflammation is, perhaps, the reason why internal antiseptic treatment of typhoid fever is not more effective.

I have also operated unsuccessfully on one case of intestinal perforation due to typhoid fever. The patient, however, was not seen until many hours after the perforation had taken place, and he was already in extremis.

As suggested at the beginning of this report, it is not for the purpose of exploiting wonderful cures, for, in fact, many of them have not been cures, but rather to describe some rare or unusual cases. If several operators of large experience would do this once a year, it would be not only interesting reading but, I think, also profitable knowledge, especially to the surgeons throughout the country, whose experience is more limited, and if I have succeeded in interesting or instructing anyone, I am content.

The Institution for the Feeble-Minded.—Dr. C. B. Simcoe, of St. Joseph, Mo., has been appointed by the Governor of the State to be Superintendent of the new colony for the feeble minded. For the past three years Dr. Simcoe has been an assistant at the State Hospital for the Insane, No. 2, at St. Joseph. The colony for the feeble-minded will be located at Marshall, Mo., the citizens of that place having donated 200 acres of land for the site. The institution will not be opened until sometime during the summer.

Report of a Case of Placenta Previa.

By FRANK HINCHEY, M.D.,

ST. LOUIS, MO.

Read before the Medical Society of City Hospital Alumni, February 1, 1900.

IN the evening, August 30, 1899, I was called to see Mrs. E. K., 30 years of age, Canadian by birth. She gave the following history : General health has always been good, never having been confined to bed except at childbirth. Menses began at the age of 17, usually lasting three or four days, at times with severe pains on first day ; always regular, and flow of clear blood, free and constant.

Marriage, five years ago (in 1894), apparently had no effect on menstruation, save that she suffered pains at rarer intervals. Became pregnant six months after marriage ; normal delivery ; head presenting. Second pregnancy almost two and a half years after marriage ; delivery same as former. She thinks there was more bloody discharge and more abdominal discomfort after last delivery than after first. Also some severe backache at intervals while nursing. No menses while nursing her first child. While nursing second child, in January, 1899 (about fourteen months after delivery), had painless menstruation of three days' duration, quite free. Menses again in latter part of February and March, each lasting four days. She ceased nursing child in April, and on April 20th had free, bloody discharge, lasting ten days, without pains, that she can remember. About May 30th had free flow, lasting six days. About six weeks thereafter (July 4th) severe flow began, continuing without cessation for eighteen days. At times flow would lessen in amount, then would have some pains, followed by passage of clotted blood. This severe loss of blood caused a great deal of weakness, with dyspnea, and palpitation on effort. Complaining also of slight cough, she was treated by her physician for incipient phthisis pulmonalis. Health improved rapidly on cessation of flow, and for about two months she was able to attend all household duties. On August 30th she began to flow again, this time more freely than on former occasions, though it continued but one day. She then sent for me. Flow had not been preceded by any warning pains, "came with a gush," as she described it, and was at first bright-red color, then darker, and interrupted by free passage of heavy clots. Towards cessation of flow she began to have severe pains in hypogastrium and

lumbar region. No record of number of soiled napkins had been kept. She was in bed, pale and anxious. Pulse 96, of small volume. Examination of lungs, negative. Hypogastrium and inguinal regions tender on palpation. Small, firm mass in hypogastrium noted on deep palpation and percussion. Bimanual examination revealed firm, enlarged uterus extending about one inch above symphysis pubis. Vagina capacious, walls soft and lax. Perineum slightly lacerated. Cervix rather low, soft, with bilateral laceration, more marked on right side. External os slightly patulous. Both lateral vaults rather tense with enlarged uterus. Marked pulsation of uterine arteries, especially on right side. I prescribed a uterine sedative, with complete rest, explaining the danger from hemorrhage. She would not believe herself pregnant.

I next saw her about ten weeks later (November 8th), when she stated that for seven weeks (or until October 18th) there had been no flow. Then from October 18th to time of visit (three weeks) she had experienced an almost constant loss of blood, free and clotted, at times very pale, again very dark. Never any disagreeable odor. Also stated she felt life September 20th. I again examined, finding uterus extending to umbilicus. Massage of uterus induced fetal movements. Cervix high, rather to left of median line, much enlarged, very soft and quite patulous. Marked bulging of both lateral vaults. Bloody discharge from cervix, free from bad odor. Complained of backache and headache, the latter very severe when flow is most free. Urinalysis, 1018; no albumin. Advised her of the danger and urged her to enter hospital so that she might get perfect rest, prompt attention, and that abortion might be induced soon as demanded.

On November 26th she was taken to hospital, having had very free hemorrhage on preceding day. Was put to bed; active treatment being deferred until seventh month of pregnancy. For two weeks lost very little blood—most of time being in bed.

On December 9th she had another large hemorrhage attended by severe abdominal and lumbar pains. Next night at 11 o'clock, after having had bowels evacuated, and abdomen and vulva shaved and thoroughly cleansed, she was removed to operating room. Fetus was in L.O.A. position, heart-sounds being heard quite readily. Movements very active. Cervix very high, external os soft and dilated to admit two fingers (with force); internal os dilated to admit tip of examining finger. High position of cervix prevented digital dilatation. Under total anesthesia, Goodell dilator and similar instruments caused os to dilate sufficiently to permit entrance of Barnes' bag, cervix being steadied by tenacula. Bag slowly filled with sterile water and as tension increased the bag burst. A second bag was then placed and left

in situ three-quarters of an hour, being expelled by her efforts to vomit on awakening. The os was still rigid, no increase of dilatation having been effected. It was then thought best to pack the canal and vagina very tightly to check hemorrhage and perhaps secure some softening and dilatation. Packing was with iodoform gauze and placed very tightly, extending within internal os. Next evening at 6:30 (eighteen hours after packing) she was placed under anesthesia, bowels having been evacuated, and urine withdrawn. Position of fetus had changed, head being in left inguinal region, back and side presenting at cervix. During the eighteen hours preceding she had felt no labor pains, was quite comfortable. On removal of packing, cervix was found somewhat softened, so that first joint of index-finger could be passed into uterus. After drawing down uterus with this finger, dilatation was facilitated by forcing in second finger and part of third finger. Both fingers having been passed as far as second joint, with hand in the vagina, the placenta was completely detached as far as could be reached. It was adherent chiefly in right postero-lateral quadrant. The hemorrhage was not great, the hand tamponing quite effectually. Then with right hand pressing firmly on fundus to force fetus toward cervix, membranes were torn, and by Braxton Hicks' method fetus was turned until a leg could be grasped and brought down as a tampon. Owing to the position of fetus it was necessary to use fingers of the left hand in uterus and to pass them through a portion of the placenta. With delivery of the leg a good uterine contraction occurred. This was maintained by firm compression of uterus by an assistant, as without such continued compression relaxation occurred. Following advice of several authorities, I decided to make steady, increasing traction on the leg to induce establishment of strong, normal uterine contractions, thus giving time for relaxation of the inner os. To this end the chloroform was withdrawn. This measure had to be abandoned, as on partially arousing from the anesthetic she began to vomit with such violence that the assistant was unable to overcome the rigidity of the abdominal muscles, thus losing control of the uterus, which immediately relaxed. The only course was rapid delivery under full anesthesia—certainly more dangerous than would be the waiting method with good contractions, for with the rigid os the head must cause trouble. The delivery of the other leg and trunk was quite easy. When the head engaged it was necessary to force it back until the arms, which were relaxed at sides of head, could be drawn down. Rotation was properly effected and with body thrown forward on mother's abdomen the face was partially freed to permit entrance of finger in the mouth. Then with one finger in mouth and two fingers on occiput outside of cervix, the head

was finally liberated, the uterus being carefully guarded by an assistant. The placenta was immediately delivered by passing hand into the uterus. Hemorrhage was quite free, and to secure contraction hypodermic of ergotole, m xxv. , was given, while handfuls of broken ice were placed in the uterus, followed by free douching with hot water and then swabbing with gauze saturated with acetic acid. These measures were successful for a few moments, when the uterus relaxed, calling for their repetition. Another injection of ergotole was given at the same time, but relaxation again occurred, despite strong massage of the uterus. However, after this third relaxation we had no difficulty. The uterus was at once washed out with several quarts of very hot sterile salt-solution, washing being done through a stomach-tube to secure free flow. A firm abdominal binder was applied and after being put to bed, gentle massage of uterus was continued for one hour and a half. Also ergotole, m x. , hypodermically, were given every two hours for six doses, after which m xx. , by mouth, every three hours for next twelve hours, at which time toxic effects manifested themselves. No douches were given.

Recovery was uneventful, temperature being about normal, except on third and fourth days, when it reached 99.4° and 99.6° F. This was due to trouble with breasts in checking flow of milk. This disturbance subsided under bandage and massage of breasts, using camphorated oil as a lubricant. Left hospital on eighteenth day.

Three days afterwards she was attacked by a severe case of diphtheria (confined to throat) temperature reaching 104.5° F. Diagnosis verified by culture media. Three injections of antitoxin were used, the first of P. D. & Co.'s XX, No. 2, the others of a preparation by City-Chemist. Again recovery was uneventful.

The child lived three hours and was apparently a seven months' fetus.

Of especial interest to me in the case was the early appearance of the hemorrhages. In lateral implantation of the placenta, Winckel states, and Müller's tables corroborate him, that the first hemorrhages generally appear after the thirty-second week, and in central implantation from twenty-eighth to thirty-sixth week. In this case of lateral attachment about or shortly after the time of impregnation the patient suffered a hemorrhage lasting ten days. And, subsequently, there was a monthly flow to correspond with each menstrual period, she stated, though the dates of flows which she gave concurred

with menstrual periods only at times. Still she gave the data from memory and perhaps recalled only the times of greatest flows. We may suppose these early flows to be due to efforts at abortion, although she could recall no attendant pain. This absence of pain with, or preceding the hemorrhages, first caused me to suspect the true nature of the case—a point I regard of much importance in diagnosis.

The uterine inertia is also of interest—the relaxation persisting when abdominal massage of the uterus was discontinued, despite the severe manipulation of cervix and fetus. Authorities, some at least (Lusk), advise the use of ergot in the inertia of placenta previa, but we feared the action of this drug in the presence of such a rigid os. The avoidance of post-partum hemorrhage I ascribe to the ergotole and massage of uterus through the abdominal wall. This danger in placenta previa cases is due to the fact that the lower zone does not contract as firmly as do the upper segments

Of interest also was the futility of use in this case of Barnes' bags. One was left *in situ* for forty-five minutes, and with the patient under chloroform, effected scarcely any change in the dilatation, the bag expanding readily enough above and below the point of constriction, that is, in the direction of least resistance.

Damages Claimed for Antenatal Injuries.—The Supreme Court of Illinois has recently handed down a decision in a peculiar case. It was that of an infant who claimed damages for a deformity alleged to have resulted from injury to the mother before its birth. The mother, while pregnant, was injured in an elevator accident at St. Luke's Hospital, Chicago, her left leg being caught and crushed. When the child was born, his left leg was deformed. The Hospital authorities settled with the woman for her injuries, and then she brought suit in the child's name for \$50,000 damages for the deformity, which it was claimed was due to the same accident. The Court dismissed the suit on the ground that at the time of the accident the child could not be credited as a separate being, capable of sustaining an action independent of the mother.

The Relative Value of Antisepsis and of Improvement in Technique, as Regards the Actual Results in Operative Gynecology.

By L. GUSTAVE RICHELOT, M D.,

PARIS, FRANCE.

Presented at the Third International Congress of Gynecology, at Amsterdam, Holland, August 8-12, 1899.

[CONCLUDED FROM PAGE 120, FEBRUARY NUMBER.]

Freund and others advise us to return to laparotomy, better armed as we are, and more sure of our position. It is not alone the idea of improving the operative prognosis which actuates them; the examination of the pelvic lymphatic nodes, and the dissection of the cellular tissue can be nothing but elements of decided importance. To what conclusions we must come in thinking of it from the therapeutic standpoint, the future will teach us.

I have said that the methods and procedures have been simplified. It is in this sense, so to speak, that progress has been made and is still to be made. No operation is better adapted than is abdominal hysterectomy for showing us successive developments of the technique and their influence upon the results obtained.

In the absence of historical data, of which you have no need, I will tell you my personal recollections and impressions. We became habituated in France, as abroad, to the external pedicle. One day Prof. Treub came to Paris and told us one could make an intraperitoneal pedicle with a varied elastic ligature. In imitation of him, I replaced my pedicles, and very successfully. My first results were communicated to the Society of Surgery in November, 1890. I preserved the records of that meeting in which one of my colleagues told me that in Germany, as in France, the extraperitoneal treatment of the pedicle was the method of choice, and that I

should mend my way; in which another made the statement that all would be well if one would only sprinkle tannic acid upon the mass fixed in the wound. I did not follow their advice, but continued the campaign which I had undertaken. Nevertheless there remained the bleeding surface of the stump, its asepsis imperfect in spite of the action of the thermo-cautery, the intestinal adhesions, the dead remains of the strangulated parts, the elimination of the ligature across the strained muscle tardy and after a somewhat prolonged suppuration; these things gave us a feeling of sadness when we saw so many deaths. With other operators, I substituted strong silk for elastic cord; I fashioned a flap of peritoneum to cover the stump, the operation then became very successful, and I gave my new observations to the Congress of Surgeons.

Some still said to me (this was in 1893) that a Vienna surgeon of great authority, after unsuccessful attempts, had gone back to the extraperitoneal pedicle, and advised me to return to it also. I did not stop—I had been obliged to remove the stump through the vagina on account of subperitoneal suppuration. I had recognized that the best manner of avoiding all chance of accident, slight or serious, primary or secondary, to the pedicle, was to prevent the pedicle itself from becoming attached to the adjacent structures.

Following this course I was one of the first converts to total abdominal hysterectomy, and while the experiments of Kelly, in America, and Doyen, in France, were being made, I practiced total removal of the uterus, at first aiding myself with forceps introduced through the vagina to the seat of the trouble, later I made use of a method which at once did away with forceps and coarse silk ligatures, all useless details. My method was to compress the uterus from all sides and isolate it like tumor in the midst of the tissues.

The discussions of the Society of Surgeons from June to December, 1897, show us that the surgeons arrived by different ways at the same result, inspired by the same principles, following procedures differing only slightly from each other, and having well in hand an operation which had become simple and at the same time prolific of good results.

Vaginal hysterectomy also owes the place it occupies to

certain simplifications, which, in place of demanding from us several years of study, came of a sudden and transformed it in one day—the usage of forceps at the seat of the trouble; and it is apparently their defiance of this method which prevents our foreign confrères from according it entire justice. The greater number of them do not leave the forceps upon the diseased tissue; they have not had to do brilliant operations except in simple cases, for the forceps-pressure is upon this point the condition *sine qua non* of hysterectomies for serious lesions of the adnexæ with suppurative adhesions and fixed uterus. Not only does it permit those to operate who otherwise would be unqualified, but it lessens the danger in certain operations, which could be done without it, because it prevents delays and prolonged handling of the parts, maneuvers which soils the fingers and infects the peritoneum.

To pretend to raise the uterine apparatus, very large or greatly infected, would be to court mishaps and to discredit vaginal hysterectomy. All I say concerning forceps is also necessary to say of morcellement in its different forms, and particularly of anterior hemisection, very happily conceived by Doyen. The operation is only possible by those procedures which have made it a normal intervention when all is well understood and well managed.

I would not say that everything new and progressive should be forbidden, and that the forceps at the site will never be dispensed with. Angiotripsy, recently conceived, is an experiment in this line, but one whose success is still unassured, for it lacks certain advantages of the forceps-pressure which prevents the infected parts from going back into the abdomen, and draws down the surfaces of section and permits the tampons to envelop them. Let us always search for advancement, but not with undue haste.

I will speak now, in conclusion, of the interest that attaches itself to the *details of execution*, and how important it is in order to be successful, to choose wisely from them, and to have at the time of each operation a knowledge of the end to be attained; to avoid fallacious theories concerning the work at hand. This side of the question would doubtless be most difficult to treat of if I wished to probe it, for I would

have to make a profound analysis of our smallest deeds and accomplishments, but it is here again that we should follow the true surgeon—the one who operates so that in his hands surgery appears easy and it seems that each one might imitate him.

At each step, from the commencement to the end of great operations, the surgical mind takes occasion not to see things as they are. Some pretend that in perfecting hemostasis of the abdominal incision, the skin must not be pinched; why? Others wish, in rejoining the lips, to tie the threads very loosely; why? Others, in truth, are in the habit of treating the abdomen as if it would rupture at the slightest movement. These are small details, but he who pays attention to them can also, under graver circumstances, depart from the straight line.

Happily there is unity of opinion on some points of real importance. Thus, in the course of a laparotomy, we no longer wish the coarse silk threads hanging from the tissue, left in the abdomen as a foreign substance, or drawn into the vagina, to be later disposed of. Sufferings, pelvic abscesses and fistulæ used to be the result. But many surgeons still hold to the thread, which does not absorb itself; only they have been made to realize that to avoid the least danger of suppuration threads of gut or silk must be fine and must not go deep through the tissue.

Again, one should pay careful attention to the method of suture. This is not always well borne by the abdominal wound, the aponeuroses have no affinity for the U-shaped suture, it should be removed. Noble, of Philadelphia, tells us that he likes silk, provided it be fine; but he avers that it provokes accidents in the case of pelvic suppuration, and that it is scarcely adapted to the vault of the vagina. Our eminent colleague prefers well-sterilized catgut, but why does he say that the use of it is difficult and demands long experience? and, yet, why does he speak of the danger of hemorrhage?

Truly, I, who without scruple, use continuous sutures and those of U-shape; I, who have always seen a catgut of medium-size and easily handled take firm hold and result in primary union, have trouble in understanding, save for intestinal su-

tures, where a thread of extreme fineness and at the same time strong, is properly the predilection for silk and opposition to catgut, to-day, when one knows how to prepare it.

With coarse threads have disappeared the large adnexial stumps, with bleeding surfaces, which, like old uterine stumps, caused adhesions, compressions, tracts and lesions of the intestine, and fistulæ. After having detached the hemostatics and tied each vein, we again cover all the denuded parts with the peritoneum. But it is not always possible to entirely reorganize the seriously affected surfaces, for some have irregular folds and depressions which can not be overlooked without the risk of propagating infection.

Is it necessary to recall the polemics which have been called forth by bathing, drainage and sponging? Must I speak of the surgeon who declares that he drains without washing, another who washes but never drains, and a third who says that washing and drainage are equal nuisances, but with one accord affirm that they have "*excellent results*."

To-day, simple good sense recognizes the worth of thorough washing of the healthy peritoneum, in order to protect it from diffuse peritonitis.

But is it not a question of measure and opportunity, and is it not useful when very virulent pus is diffused, to quickly check it by washing, and limit its course by compresses? What think the surgeons who to-day still say: "I never wash," or oppose absolutely all drainage?

To return to vaginal hysterectomy. No operation better shows the necessity for the surgeon to carry out some clear, well-directed ideas, or to have, besides manual skill, a full comprehension of what he must do and what he must avoid. It is what I advocated at the Geneva Congress (September, 1895) in giving my ideas on "The Manner of Performing a Vaginal Hysterectomy." Nothing is easier in pelvic suppuration than to do a hysterectomy as bad as the worst of laparotomies, nothing is easier than to open the pus-sac into the peritoneal cavity. But there is a way of "finding the joint," of reaching the adnexæ from without and of protecting the peritoneum. There is a way in certain cases of escaping too serious operations and of obtaining, in spite of what may

have been said of it, the same immediate and lasting results, by simply emptying the tubes instead of removing them.

There is a way of causing a complete and absolute hemostasis, of staunching the blood that seems to come from deep within, by closing artificially the posterior rent of the broad ligament, which can not be seen but can always be found; of avoiding a series of accidents which authors complacently enumerate and which are not in the program of the operation; and, lastly, of economizing liters of artificial serum. And then there is the after-treatment, which is of vital importance. How to dispose of the sponges within, what day to take them out, when and in what way to make the first injections—all these details, if more carefully observed and better understood, would make us agree as to the value and the results of vaginal hysterectomy.

I have now said enough upon the subject to show how antisepsis, while being the base of modern operative gynecology, is far from being the only condition necessary to make a gynecologist or an operator. We have seen it cover a multitude of imprudent steps. Could we but cry, in parody, a word of the French Revolution: "Oh, antisepsis, what crimes are committed in thy name!" It seems as though there was no more progress for it to make; while the art, ever moving forward, promises us many more perfectments, reforms and gratifying statistics.

THERAPEUTIC RESULTS.

If I wished to demonstrate that too-evident truth, that the best-timed procedures give the most perfect therapeutic results, I should have to review all surgery and give myself up to an endless digest. But I have not forgotten that the work demands of us the relative value of antisepsis and technique. But in order to appreciate the part which each of them takes in bringing about our remote results, I shall take for my theme, not the major operations in which life is at stake, but the reparative ones.

My task shall be here, as in the preceding chapter, to show you that antisepsis, in affording the gynecologist security, has allowed him to experiment, to vary and improve his tech-

nique, and thus to obtained the most satisfactory and lasting cures. Instead of emphasizing, as I have previously done, the improper tendency among certain operators to give antiseptics almost all the credit for the immediate success of our interventions, I shall endeavor at once, as far as it concerns ultimate results, to fix your attention upon the opposite tendency, which forgets the manner in which antiseptics prepares the field that it may exaggerate the importance of the procedure. I would willingly take for my title "The Illusions in Individual Technique and the Procedures of Various Authors," and my result would be here again to show you that we should strive to do away with useless research, and that the most ingenious inventors, and the most precious refinements do not avail to fill the indications as ordinarily viewed. Permit me thus to limit my subject and to illustrate it by a few examples:

There have been many discussions as to the best method of closing the abdomen after a laparotomy in order to bring about a firm scar and to avoid hernia. An interesting discussion before the Geneva Congress, in 1896, brought to light ideas of eminent surgeons which were complicated and often contradictory. There were advanced as causes of faulty union: Sutures drawn too tight, imperfect coaptation of the lips of the wound, premature removal of the threads, the absence of an abdominal bandage, the length of the wound, the closure of a single layer, the nature of the thread, and, lastly, the nature of the tissues united. The linea alba was of no value, and should have been excised, and the recti scarified with a knife before reuniting them. Then the subcutaneous suture came into use, and under the name of the esthetic incision, a transverse abdominal wound was proposed. In the midst of these various considerations one had to search minutely to discover that a stitch-abscess had anything to do with the future of the scar.

Indeed, I agree that one should not neglect certain elementary precautions, as taking away the retractors before the wound edges have been united, allowing the tissues to dispose themselves as they are inclined, and to form depressions or elevations. I recognize full well that the suture *en masse*, besides being championed by only a few now a days, has not the

same worth as the suture in layers which almost all of us have adopted. But the matter of prime importance and that which surpasses all others is the avoidance of suppuration. I am personally sure that such extreme care as regards coaptation is a matter of less importance than is commonly supposed. I have seen the shortest incisions open up after they had suppurated; while very long ones remained perfectly firm, and the women throw aside their abdominal bandages at the end of two months without any harm resulting. In the practice of other authors I suppose that the bandage is of great use to their patients, but do not think that it prevents hernia. I presume that for the deep layers, the best thread is sterilized catgut, that silk gives good results, but that one must make a practice of using fine strands close together, and that it is, after all, a little bit less sure. I take it for granted that Florentine horse-hair is fine for the integument, but to use it for ligatures and buried sutures, is to court foreign bodies and sources of infection, and I think, lastly, that it is taking too much pains when one opens regularly the sheath of the rectus in order to excise the linea alba and to resect a little muscular band as well as to make a separate suture in each of the various planes.

Who has told you that the aponeurosis lacks blood-vessels, and heals badly? who has told you that the rectus muscle is not considerably damaged by this one procedure of laying it bare? It is difficult except upon abdomens which are distended, and it would be absurd to force precision to the point of incising the linea alba without opening the rectus sheath; with this open include in your suture its anterior half with or without muscular tissue, bring them well together, avoid an infection and I will guarantee you a lasting union. With regard to the subcutaneous sutures, I can assure you of a scar which will be almost invisible after a few months.

After reading controversies where the smallest details were given great importance, I asked myself at last: "Am I, then, a novice, that I have seen nothing of this in all my cases?" Have I not seen the wound open up in consequence of suppuration alone, and the extent of it governed by the amount of tissue infected? Have I not seen this at the site of drains and wicks which had to be left in? Have I not in

the same cases seen scars which were irregular, indurated and likely to undergo keloid degeneration? Have I, on the other hand, not seen, after union by primary intention, that the laparotomy left no trace behind? Have I not the experience which enables one to plan and carry out his ligating as he will without having to fear that the appearance of the scar will be modified thereby? And, lastly, do I not know that the mode of suture is of little importance as long as the asepsis be perfect?

Another example which suits my purpose is this: In prolapse of the genital organs colporrhaphy, well and simply performed (with the exception of certain women whose tissues are very lax), is always productive of perfect results if the wound heals by first intention. And with that in view notice the interminable number of methods proposed. There were extenuating circumstances for everything that was done before the era of antisepsis, but since that time, double lateral incision with conservation of the posterior wall of the vagina, injections of alcohol into the depths of the walls, silver wires or horse-hairs, carried beneath the mucous membrane and folding it in divers ways, colpodesmorrhaphia of Freund, colpostricture of Jacobs, transplantation of a piece of decalcified bone, all these are the procedures which have been adopted to take the place of a colporrhaphy imperfectly conceived.

Permit me to say that the time is passed for infinite trifling, for longitudinal and transverse incisions, and for reuniting the different layers. The indication is to dissect up the tissue and to shorten it. I have adopted the operation of Hegar—the excision of a triangular space, at the expense of the posterior wall, but by all means ignoring directions of the author regarding the various stages, complicated sutures, and a struggle after mathematical regularity. Above all, I strive to stop hemorrhage and shorten the tissue as much as may be necessary.

The posterior method is a veritable resection taking in the complete thickness of the vaginal wall. Those who make a superficial dissection of the mucous membrane by short strokes of the knife and draw the walls of the wound together without taking away any of the tissues, leave to the vagina too much substance and this permits it to loosen up again. The summit

of the triangle should be placed very high near the external os and its divergent branches should extend considerably into the lateral areas. It matters not if the bleeding space should be possessed of perfect regularity, and it matters not if the edges of the wound do turn up a little and do not approximate one another exactly; immediate reunion never fails. But it is of the highest importance that the amount of the vaginal wall resected be sufficiently that it, so to speak, at first glance, seems excessive. Furthermore, it is of importance that the needle engage all the tissues to the right, to the left, and in front of the rectum to form a solid mass—a new perineal body.

The results of my colporrhaphies have not ceased to confirm me in these ideas and to demonstrate how important it is to strive always to see just what has to be done and to execute it in the most simple manner possible, antisepsis will accomplish the rest. Antisepsis is necessary for union by primary intention and in order that the simple operations may realize their full value. Thus do I affirm that for definite success in our reparative operations, clean hands and good sight are of first importance for the spirit of invention and subtilities of the operative manual.

I stop here, because in searching for other examples, I should risk trying your attention, and I might incur the reproach of defending personal ideas a little too vigorously.

In studying the direct connection between antisepsis and progress in the technique, I have not yet said what new impulse that powerful union has just given to conservative gynecology by substituting frequently for the extirpation of organs a more moderate and delicate treatment. You will approve, I am sure, my finding in this, the most fitting conclusion to this discourse, already too long, to which you have listened. Formerly, our only ambition was to take out diseased organs, as we did large tumors; we had nothing but synthetical procedures for removal *en masse*. To-day, in order to preserve relative integrity of function, we make use of partial removal of fine resections of sutures which re-join the tissues and reconstruct the organs. We now know how, in the course of a laparotomy, to enucleate a fibroma from its seat, to close the muscular wound and leave the uterus in place. We are able to treat a polycystic ovary

by ignipuncture; to obliterate a large serous or hemorrhagic cyst in our respect for healthy portions of the tissue. We can open an obliterated tube, empty it of its contents, refashion the fimbriæ and attach it to the ovary, and several of these operations have been followed by pregnancy. In short, a perfect asepsis gives us license to enter and investigate the viscera in order to analyze their morbid conditions and repair instead of destroy them. It authorizes our anaplastic operations not alone upon the neck of the uterus or the walls of the vagina but in the depths of the pelvic cavity. Our researches in this direction have not yet reached their end, but they lead us to believe that the future will add that most precious boon—therapeutic success to this already assured safety of our radical operations.

The Philosophy of Living.

BY ISADORE DYER, PH.B. (YALE), M.D.,

NEW ORLEANS, LA.,

PROFESSOR OF DISEASES OF THE SKIN, AND SECRETARY OF THE NEW ORLEANS POLYCLINIC; EDITOR "NEW ORLEANS MEDICAL AND SURGICAL JOURNAL";
MEMBER OF THE NEW YORK MEDICO-LEGAL SOCIETY, ETC.

NO matter what the tastes or inclinations of the individual may be, there is an absolute law of Nature which compels the observation of community obligation. It is this phase of existence which distinguishes living from inanimate organisms.

Physical laws determine the attraction of substances living or inert, the latter having a physical condition known as cohesion, and the former a condition of combination or affinity.

Cell-life, as the original type of living existence, establishes community principles at once, and as the type expands into distinct recognizable organisms, the cells apply these principles to a basis of living.

Lower organisms in any phase of life, in the animal or

vegetable sphere, are like the human kind in the application of general principles of living. With most of these, however, the physical principle is paramount, while in the human individual the psychic element enters to control the physical principles.

In plant-life, growth and development, as well as regeneration, are largely chemical, the absorbing power of the cellules of plants, leaves, stem, and root being sufficient to abstract from air, sunshine, and the earth the vital principles or the essentials to their preservation.

This appreciation and possession of elements is simply the response to the physical law which demands them; when the supply is prevented, or the conditions of obtaining them are interfered with, the plant dies.

All cell structures are alike on general principles, only some are capable of higher development than others, and the higher the development the higher and more numerous the qualities of the cell become.

So in approximating to the development of the human being, the species of animals grow more and more free agents, directed by the more marked development of the cells of psychic sense, the cells of the brain, located where they may be, but directing will, effort, thought, motion, functions, and determining conscience and purpose in life.

If primitive living existence is subject and obedient to definite laws, then the highest type of living existence, exemplified in man, should be as obedient and more obedient to the definite laws dictated by the physical being. The human mechanism is more delicate and more complicated than congener types of living organisms and it requires the best of care for its perfect action.

Nature's laws, then, are as apt in their direction of the human as they are in their care of the vegetable or of the animal kind.

Even the tyro at floriculture learns early the influence of seasons and of soil upon the growth and development of plants and flowers; with the more delicate or more rare sorts the care grows more constant and more studied.

The human plant deserves an equal care and yet only exceptionally gets it.

From the moment the infant is brought into the struggle for existence it is abused. After a time it accomodates itself to circumstances, largely through its natural or innate endurance and adaptivity.

The poor being is exposed to the embrace and the caress of every intimate friend of the family and between times to the fondlings of the parents and nurse.

More than this, the infant is subjected to the experience of water and soap at a time when its skin has not yet grown accustomed to its new surroundings.

How much better the lubrication, if only occasionally, with some bland oil, warmed and gently applied, than to subject the always-resistant baby to a soapsud experience, *nolens volens*.

When the infant grows into more months, or years, bathing is no longer an interdict—and for simple reasons; for the infant has become accustomed to its cell activities; it has established its physiologic relation to the outside world; its glands have become active, and it is, in fact, a model machine with all its parts in active operation, to continue just so long as the proper supply of the right kind of fuel is kept up and provided the whole machine is kept in order.

Here usually most parents are at fault. After several children have successfully graduated from infancy, their parents accept a large degree of credit of having "raised" them. It is always so with our human kind; eventualities are always discounted, and accidental and fortuitous success is always appropriated by us.

Parents are not wholly to blame—for ignorance is not always the result of neglect, and with regard to children most parents are ignorant through the lack of the proper idea of the necessity of education.

The child needs as much and as constant care as the plant and the care must be judicious.

Most infants are overfed.

More than half of them are badly fed.

A large part of them are criminally fed.

When a baby cries, most of us feel sorry first, then wonder what to do, and finally, not knowing what to do, do something, or anything, which is usually the worst thing.

The mother, anxious, nine times out of ten believes the child hungry and feeds it, or, because at previous times the same remedy has quieted the child, she repeats it, believing that on that account her conclusion must be correct.

There are two points here to be noted :

The first is that most babies cry because they want to. They want to because Nature meant them to. Nature meant them to because in no other way could a baby exercise its organ of respiration or its vocal apparatus. It is as natural, therefore, for most babies to cry as it is for young birds to chirp, for young dogs to whimper, or for young cats to mew. Let most babies alone, and you will find that they will stop when they are tired, will go to sleep—all the better for the exercise. Cater to the infant, feed it, coddle it, stay awake with it, and you only cause indigestion, or then over-exercise the child, not yet able to think for both of you.

I do not refer to sick babies, for that reason I have said *most* and not *all*. Sick babies are like sick men or sick women, like sick plants ; they need all the care they can get, and they need the watching which the care demands.

How often in the twenty-four hours is the usual infant fed—and at what times? Ask this question of every mother, draw a table of averages, and the result would be appalling. Think of the basis of indigestion, of ills in consequence produced.

Infants under six months should be fed every two hours, when awake, and not approximately, but *by the clock*; up to twelve months, they should be fed at intervals of two and one-half hours ; after that, until the second year, I mean until twenty to twenty-four months old, every three hours—crying to the contrary and notwithstanding.

Now for the babies badly fed.

Nature provides every means for the maintenance of its species and varieties—according to their needs. The infant and its physical obligations to itself required certain definite elements of food—no more, no less. The delicate mechanism of its intestinal tract is prepared for food—but for a certain kind only.

From various causes, either those of necessity or those of intention, the baby is deprived of mother's milk and substitutes

are given instead. Next to the mother's milk, cow's milk is the most desirable infant food, condensed milk next, malted or pre-digested milk next, and from among these there is seldom difficulty in making a selection.

Until the baby has reached the twentieth month, *there should be no other article of diet*, because first, the baby does not need it, and second, if it is given, it only makes extra work for the babies' stomach in getting rid of it.

When I meet an instance of the "sugar teat," the "sip of coffee," the "taste of beer," the "spoonful of soup," the "bit of meat" habit, among mothers, I feel that the child should be placed under proper care to prevent the criminal results.

Perhaps this seems too practical; that I am devoting too much attention to the infant; but we must remember that the infants of to-day will be the men and women of the twentieth century and it will be they who must determine the future, and when they are men and women they will find the struggle for existence even harder than we.

My aphorisms and my seeming dogma are aimed at directing thought upon the lines they touch—not to establish laws or even rules to follow. How often a criminal at the hour of death recalls his childhood, and with a spark of regenerate intelligence regrets the neglect and is as embittered as he is reckless at the possible taste of happiness which environment and lack of care have deprived him of.

When an occasional dirty-faced and orphaned child is brought under my professional and public care, I feel a sense of personal responsibility, forgetting that I can not be at fault—but we are each responsible for the environment and care of our own kin. And this is the philosophy of my article: The obligation each man and each woman owes to his own, particularly the children.

Boys and girls grow with only the law of living, which example gives them. They learn their physiologic life from other boys and other girls, or else by accident. Their habits may or may not be properly observed, but most times the parents have not thought about it. This is no reason for the neglect.

Every boy and every girl, from their first evidence of sentient life, should be told what is expected of them in the

physical world. The public school begets vices and breeds pruriency; all of which could and should be anticipated and prevented at home.

Every human being is possessed of a distinct mentality; by this I mean ability to use the mind or brain. The mentality of each is limited in degree. One child may become a genius, another a financier, depending entirely upon the finiteness of the limitation of his mentality.

This mentality is capable of cultivation and of broadening into various usefulness.

In the child the germination of the future purpose is often evidenced. Sometimes, too late, the man realizes the field of his usefulness when his energy and purpose are gone.

Pedagogic methods to-day are directed at cultivating elementary ideas of different phases of education, of art and science in the young. The kindergarten is an outgrowth of this. In Germany infants are shown shades and variations of the prismatic colors so as to accustom and to train the retina to their recognition later on in life.

This is all in the detail of environment, of education, of instruction, and of example, which together make the perfect development of any living cell combination, whether of human or of lesser kind.

Occasionally some tree will grow on soil unsuitable for its kind and will tower into space above its lesser types, but this is as exceptional as it is for genius to come from poverty or from crime.

Mr. Horage Fletcher, in a recent book, "The Lost Waif, or Social Quarantine," takes the type of child kind, resultant upon the neglect of two or three or more generations, and studies each phase of these, showing possibilities of reform and relief under proper environmental care and instruction.

I have seen, in Europe, the ruins of ancient castles, with one stone toppled over another, and have found on closer examination that many of the stones had crumbled, and were crumbling. On many there were thick mosses and lichens, pretty to look at, but suggestive of the parasites which the morbid side of Nature's law has burdened upon us. There is

no light without shadow ; no perfection without the antithesis, and the absence of health is disease.

Beginning with ourselves, the possibility of improving on the spheres of society will grow more and more likely.

Civilization has brought with it all sorts of ills, the chiefest being ambition and indigestion. The first is the direct result of selfishness, and the second is the consequence of the first.

In our race for supremacy, social, commercial, or professional, we grow too much to cater to our vanities and to our habits, and we forget our obligations to our physical being.

There must be a reaction sooner or later and with it must come the crusade of intelligence. It is a physical fact that if we abuse one of Nature's laws, there is an immediate disturbance as a result of the abuse.

How do we apply all this to the every day life of the individual ?

If we recognize the necessity of the preservation of the unit, either in the structure of the community, or in the structure of the individual, there are laws of application. Every unit must be properly nourished, must be properly exercised to make it useful or vital.

The average man or woman fails in observing the simplest laws of personal care.

Fashions dictate uncomfortable dress, and custom forces us to adopt it. We wear our feet in shoes, which would be uncomfortable if we were not accustomed to them.

Men choke themselves with neck-gear neither pretty nor sensible, while women tie themselves in knots for the sake of appearances.

We are not yet ready for sandals and blouses, nor for stockings and bloomers, but the time must come when intelligence will dictate custom.

Every day we take in a certain supply for food and of this about one-third is passed into the human organism, the balance must be gotten rid of. Physiologic habit disposes of a part of the waste, while the tissues themselves destroy the balance of the surplus food. This whole process is a phase of the metabolism of the body, and it means the change or interchange of new for used-up fuel supply. The body does, then,

a definite amount of work every minute, independent of the physical exertion or the physical energy which is expended under the direction of the will.

Dependent upon the supply taken in, the body eliminates or exhausts the material more or less rapidly.

If the supply is too great or too frequently repeated, there must be either some other means of relief, or there must be some stagnation, or interference with the normal or usual interchange, or metabolism.

We can express this differently :

If an individual is in normal health, he needs a certain definite amount of fluid and solid food to maintain the normal functions and the normal physical condition of his body.

If he eats too much, if he eats too often, if he eats the wrong things, or if he eats the wrong way, there must be some means of relief, or indigestion and its many complications result. Most people eat too much, most people eat the wrong way, most people eat the wrong way at the wrong time, and many people suffer from indigestion and its complications.

The day laborer, who does hard physical work all day, can eat meat three times a day and plenty of it; for the expenditure of energy in his occupation is sufficient to burn up the extra amount of solid and fluid substance above and beyond the immediate demand.

Directly in proportion to the amount of physical exercise the individual employs must the amount of meat or of albuminoids be estimated.

The invalid or the convalescent can not eat solid food, those of sedentary habit and occupation should avoid heavy meals.

Usually the more intellectual and sedentary the individual is in his occupation, the less inclined he is to feed on solids and on meat foods. Nature herself dictates the inclination.

Appetite and ignorance in large part are responsible for the neglect of the laws of digestion.

Few of us stop to think of the results of the gratification of appetite, and few of us really are educated to the needs of the human body in the way of food.

The human machine is like any other mechanism of deli-

cate workmanship; crowd the work and the machine gets out of order.

From the purely physical or the purely animal standpoint, all the human body needs is the supply of the elements necessary to preserve its tissues and to keep them in shape and in proper consistency.

The essentials needed are determined by the chemical analysis of the body, and then the study of food supply with regard to the demand or the requirements.

Different sorts of food—animal, vegetable, solid, and liquid, possess the elements necessary to the human economy, some more than others.

Taste dictates the selection, but as a rule misguided taste combines irrational foods.

The whole purpose of food is not the gratification of appetite, but the transformation of the latent power combined in the elements of food into the work to be done by the various organs and functions of the human body.

When the energy so created is used for the purpose of getting rid of the surplus food supply taken in in quantities far above the need of the body for its useful energy, the real purposes are made secondary; in other words, the occupation of the individual is interfered with, he becomes a slave to his digestive organs, and finally produces a diseased condition as a result.

Primitive man required less consideration in his choice of food than we to-day, because the purposes of his energy were directed almost solely at keeping his animal-being in active condition.

As civilization has grown and has developed the occupations which require mentality and the attendant skill in handicraft, the care in food selection has grown more important.

It is true that as individuals in civilized life have accustomed themselves to the consumption of materials formerly considered poisons, such as liquors, tobacco, coffee, and tea, so they have grown into the custom of accommodating their digestion to cooked food and to variations of cooking, tempered and palatized by condiments and the skill of the cook.

So it is that the American people especially, other people less so, have become dyspeptic as an inheritance.

Observance of even partial care in restricting meat diet to one meal a day, and the frequent use of fruits and cereals, would in large degree lift the burden of such an opprobrious title.

The waste material, after the body consumption of food, finds its way to the outside world through various organs, and these should be kept in regular order, exactly as the parts of our mechanical machine, used a little while ago in comparison, are kept carefully oiled and cleaned.

None of these organs is more important than the skin.

The skin is structurely arranged to do work for the preservation of the body. It is supplied with fibers of muscle and of connective tissue which hold together blood-vessels and nerves, and here and there, in thousands, glands for the purpose of making fat and sweat through which waste materials are distributed to the outer air. At all times this process of waste is going on, and at all times the skin is getting rid of definite substances which, in the vulgar way, we call scales, scurf skin, fat, and sweat.

How best can the skin be kept in perfect order?

By not abusing it.

The human body needs cleansing and it needs tonic care. Most individuals will not suffer from daily washing, and the more active the physical life, the more necessary the bath. Cold baths or warm baths are indifferent, but it is the solution of the waste materials on the surface of the body which the use of water is to accomplish.

The Turkish bath is a luxury and should not be abused. Unless for purely medical reasons, the Turkish bath should not be taken oftener than twice a week.

I am often asked, what is the best soap to be used, and I find that many of my patients are surprised when I always say white Castile soap.

In the face of the flagrantly advertised concoctions of presuming quacks, who depend upon the gullibility of human kind for a livelihood, the average man and the average woman are slow to accept such advice. Because every drug store

arranges a beautiful array of soaps of all sizes and kinds for all possible conditions and for all sorts and kinds of people, the disposition being determined by the manufacturer, the average man and the average woman are wheedled into the belief that there must be virtue in these commercial presentations because the claim is so flagrant.

The odor of Castile soap is so objectionable to many, a glycerine soap may be substituted, or the odorless soap of the French Hygienic Society. Perfumed soaps are all irritant to the skin and should be avoided. In the care of the skin, many believe the suggestion to refer only to the skin usually visible. The suggestions I may drop refer to the face, head, and hands, as well as the body.

A man should wash his head with soap and water at least every second day; a woman should do the same thing, but it is not practicable, so she should wash her head as nearly that often as possible.

The scalp should never be brushed; the hair, however, is improved by stroking with a brush as often as inclination may dictate.

Quinine and whiskey does the hair no harm, nor does it do any particular good.

Simple alcohol, or in bay-rum, or in cologne water, answers the same purpose. This can be used every day to advantage. After the scalp is washed, it is advisable to use some oily substance—the best I know is liquid albolene, which is especially desirable as it has no odor. Eggs, borax, ammonia, and the best of antiquated remedies suggested by the negro mammy and the “family doctor’s book” are absolutely harmful to the delicate scalp.

Now for the face: The best complexions I have ever seen have never known the use of powder and cosmetics, but have been thoroughly acquainted with soap and water.

Blemishes are not benefited by painting them over with face powder or with cosmetics, the contents of which are first unknown, and secondly arranged by the druggist without either judgment or other care than the appearance of the product.

Vanity often dictates the use of cosmetics because Nature has not been sufficiently kind, and the attempt to improve up-

on the natural condition results in worse trouble than the original fault.

I do not refer to the very natural objection to blemishes, but to the conditions of coarseness or fineness, of paleness or pinkness of the skin.

I do not expect that my passing word will start a crusade of intelligence directed against the abuses of the toilet, but as I am directing thought at points, grave and simple in the wisdom of living, I feel that I should enter a small voice against the baneful habits which custom dictates and which we all more or less blindly follow.

It will require the organization of common sense with an appreciation of natural laws before these can be overcome, and it will need several generations of the "New Woman" before the abandonment of feminine artifices is accomplished.

Physical perfection depends upon an entirely healthy body, and that means the healthy body in each of the physical parts, above all that of the directing organ—the brain.

With the advance of scientific thought, and with the antidotes, and with the preventives of physical ills, by and by we may attain to the law of living which can be thoroughly digested and assimilated so that living will no longer be an effort but can be directed by some rule like the rule of three.

Until then all of us must think for ourselves and somewhat for the natural parasites upon our civilization—the poorer classes.

It is largely example which begets action, but with the lower social classes the very condemnation to a denial of the better things in life makes them communistic and compels a demand for those things they are denied.

The whole world is working for charity, alleviating actual suffering and attempting to provide for those of the parasite classes who have dropped aside in the struggle because there has been no care of them.

Some systematic method of investigation should be started to study the means of preventing sickness and depravity, insanity and crime among the lower classes, so that another generation will see us freer of the burden of pauperism and its ills.

Just now it seems that the establishment of public baths, of healthful tenements, or moral influences is the indication.

But while the world grows more kind in the disposition of its charity, politics and its ramifications grow more and more depraved, and the example of a few should be first made, so that the public should be served not commercially but with a view to fraternity.

I began with a brief study of the intention of Nature in the distribution of our species and I have to conclude with the thought that for each of these the laws are the same.

No matter what the phase or sphere under Nature's direction, the same obligation to the preservation of species exists. Environment distinguishes the perfect or imperfect type, and the more perfect the environment, whether it be of things or beings, the more perfect the community of species, or animals, or of mankind.

The West African "Ju-Ju" Man.—Dr. Charles G. L. Wolf (*Montreal Medical Journal*, January, 1900), in an article on West African medicine, says that all along the coast, and also in the interior, the chief factor in native medicine seems to be the Ju-Ju or medicine man, who holds a position in the tribe perfectly analogous to that of the medicine man of the North American Indian. To him are brought all cases of sickness of whatever sort, and he also prepares the thousand and one "fetiches" which are supposed to bring good luck or otherwise to the bearer. Added to this somewhat wide sphere of action he combines under the king the function of priest, and hence is the prime mover in all religious ceremonies. What his real knowledge of medicine is seems to be very difficult to get at. The author had a number of opportunities of meeting some of them and of inquiring of medical men who had been many years on the coast in official positions, and who were, therefore, in the best position to get the desired knowledge, but none of these were able to afford very much information of a definite nature on the subject. Naturally, anything which is so much shrouded in mystery as their art purposely is, is difficult to get at, especially for foreigners, who are always to a greater or less extent objects of mistrust. But whatever, says the writer, may be said of the simplicity of the Ju-Ju man's armamentarium does not describe his knowledge of toxicology, and it is safe to say that nowhere in the world has poisoning been brought to a finer point than on the West coast of Africa.

EDITORIAL.

THE ST. LOUIS CITY HOSPITAL.

The destruction, by the cyclone several years ago, of the old building which had served the purpose of a city hospital, was regarded as a blessing in disguise, in that the city would be compelled to build a new and a modern structure for hospital purposes.

Funds for this purpose were not at that time available and the plan was adopted by which one per cent. of the gross revenue of the city, which would amount to \$50,000 annually, was set aside as a fund for this purpose. In the meantime an old building was fitted up as a hospital for temporary use.

As a result of the plan adopted the hospital fund has, up to this time, grown to the amount of about \$250,000.

A recent increase in the expenses of the city which has rendered it necessary to obtain additional funds wherever they can be had, has jeopardized this money, and it is highly probable that it will be diverted from its original purpose and used to help meet the expenses of the city. Should this occur, which at present appears most likely, it will prove a great disappointment to all who had anticipated the erection of a hospital in this city at an early period, which would compare favorably with any at present in existence and one that would be a credit to St. Louis.

The outlook for the erection by the city of a new hospital in the near future is not encouraging. An examination into the financial condition of the city precludes its possibility. The city is, practically, bankrupt. The expenses of the city have increased far more rapidly than have the revenues from which these expenses must be met. Under the scheme and charter of the city as it at present exists the rate of taxation has reached the limit that can be imposed and the

bonded indebtedness has likewise been increased to \$20,000,000, the amount to which it is limited by the charter.

The State of Missouri allows each county to levy a tax of 35 cents for each hundred dollars of assessed value of property for the purpose of defraying the expenses of holding State elections, of carrying on the courts of justice, and of maintaining charitable institutions, such as hospitals, alms houses, etc. During the time when the City of St. Louis was an integral part of the County of St. Louis and its county functions were administered to and carried on by the County Court, so corrupt had become the members of the County Court and so flagrant in the abuse of their privileges that the citizens of the City of St. Louis demanded a separation from the County. Their petition was granted by the State Legislature and since that time they have been separate counties.

So eager was the City to obtain this separation that it waived the right to levy the tax of 35 cents on each hundred dollars assessed valuation and at the same time endeavored to maintain its courts of justice, constabulary, hospitals, alms houses, insane asylums, and the State elections out of the revenues derived in other ways. It is estimated that this additional levy permitted by the State would produce a revenue amounting to \$1,2000,000 annually, which, added to the five millions, the present yearly revenue of the city, would give an amount sufficient for all needs. This right having been waived, it could be again secured only by an act of the Legislature.

Of the five millions yearly gross receipts of the city fully three-fourths of this amount is obligated for the maintenance of the courts, the water department, the river and harbor improvements, the interest on the public debt, the collection of garbage, and the police, health, and fire departments, leaving the balance, about one-fourth, to be expended on the maintenance of the streets, sewers, and parks.

At the last meeting of the Missouri Legislature a law was enacted increasing the size of the police department of the City of St. Louis, and thereby increasing the expenses of the City about \$600,000 annually. In order to meet this additional expense it must be taken from the monies available for the maintenance of the streets, sewers, and parks. As this enactment of the Legislature did not come in force

until after the yearly appropriations had been made, it becomes necessary to use whatever funds that may be available, which will doubtless necessitate appropriating for that purpose the money which has accumulated for the erection of a new city hospital.

Funds for the building of a new city hospital can be raised by levying an additional tax; this would necessitate, however, an amendment of the charter, which would have to be adopted by a majority vote of the people. An amendment to the charter can be voted upon only once in two years, and since the City of St. Louis intends to celebrate, in the year 1903, in a befitting manner, the anniversary of an important event in our national existence, an amendment to the charter for that purpose will be a necessity. Such a procedure at the present time would jeopardize the success of its undertaking in 1903.

Efforts to devise means by which this much needed institution can be erected have not yet been successful. Among other propositions which have been offered and considered was one from a number of St. Louis capitalists owning a tract of land near the southwestern limits of the city, to erect thereupon a set of buildings of sufficient size and suitable for a city hospital, female hospital, insane asylum, and almshouse, at a total expense of from three to five million dollars. This they will lease to the city for a period of twenty-five years at a rental equivalent to a rate of four per cent. interest on that amount; the city having the privilege to purchase it at the end of that time if it so desires.

The diversion of the accumulated hospital fund for other purposes will necessitate a change of plans. That such a plan as the above will be adopted only the future can tell. The present structure that is being used as a city hospital is an old and abandoned convent; one that is beyond the possibility of adequate alteration and repair to put it into such a condition that it could be termed a hospital; it is a miserable makeshift at best. The need of a new institution is urgent, and we trust that the city will act quickly and wisely in this which has been deferred already too long.

THE USE OF ALUM IN FOOD.

A legal contest of rather an unusual nature and of more than a passing interest to the medical profession was recently held in this city.

A local manufacturer of baking powder, in whose product soda alum is used as one of the ingredients, was arrested for violation of one of the laws of the State of Missouri which prohibits the use of alum in food products. This law is said to have been passed through the influence of other baking powder manufacturers who use bitartrate of potash (cream of tartar) in their products. The latter have combined together forming the so-called baking powder trust which controls the cream of tartar market in America.

The independent concerns came to the aid of the defendant with a large sum of money, while the baking powder trust, by special counsel, took charge of the case for the State. Chemists and physicians of international reputation testified as expert witnesses; chief among these were Prof. J. W. Mallett, of the University of Virginia, and Prof. Victor C. Vaughn, of the University of Michigan, for the prosecution, and Prof. Austin Flint, of New York, for the defense.

The statement of Prof. Austin Flint, who testified as an expert on physiology, and on alimentation, is of special interest.

Experiments were made by feeding two healthy men at different periods of time upon bread made by the use of bicarbonate of soda and a solution of hydrochloric acid and then upon bread made from a baking powder containing alum. In every instance, after a sufficient period of time (one hour) had elapsed for digestion to have taken place, the stomach contents were removed and examinations made to determine the extent to which the process of digestion had occurred. In each instance it was found to be the same. The experiment was also carried out upon his assistant with a like result.

The experiment was made of artificially digesting the two varieties of bread in a flask containing pepsin and by hydrochloric acid. This was for the purpose of ascertaining the extent to which the nitrogenous matter contained in the two varieties of bread were digested. Subjected to the same conditions, this was found to be identical.

It is his opinion that the two breads, namely, that made from hydrochloric acid and bicarbonate of soda, which uniting, forms carbonic acid gas and common salt, and that made from bicarbonate of soda and alum (the alum furnishing the acid necessary) which results in the formation of carbonic acid gas and glauher salts, are equally digestible and have the same action upon the human system.

His experiments have been carried out with painstaking thoroughness, and the results obtained, coming as they do from such an eminent authority, will doubtless cause a marked change from the opinions formerly held.

Free alum in food products is doubtless deleterious. Alum is added to flour of an inferior grade for the purpose of giving it a white color. If this remains in the form of alum when the flour is taken into the system as bread it is harmful, though Flint is of the opinion that it does not persist in this form but is changed in the process of cooking, and that the effects of alum, other than its local astringent action, is questionable

A certain amount of aluminum in some form appears to be present in all breads, even that in which yeast is used as the leavening agent. This probably comes from the water used in its preparation.

Wamklyn, who is an authority on the subject of breads and their adulteration, has found that unalumed bread of the best kind contains enough aluminum to represent one and a half grains of alum in a pound of flour. Bell, another writer upon the same subject, estimates this at two and a half grains to the pound of flour.

The final products of a powder containing bicarbonate of soda and alum are carbonic acid gas and glauher salts; those from a powder composed of bicarbonate of soda and cream of tartar are carbonic acid gas and Rochelle salts, neither of which are in amounts sufficient to produce any apparent effect upon the system.

It therefore appears reasonable to believe that if the various constituents are used in the proper proportion, so that they will neutralize each other, their resulting products are harmless and their use can not be said to be detrimental.

THE PATENT MEDICINE ADVERTISEMENT AND THE CENSORED NEWSPAPER.

A minister of the Gospel who had attained a certain degree of eminence as an author, recently took charge, for one week, of the management of the leading daily newspaper in the State of Kansas. It is unnecessary to state the conditions under which he assumed control of the paper, as the fact of his attempt and its conditions were early and so thoroughly advertised, both in America and Europe, that the reading world has been on the tip-toe of expectancy to admire and to criticise the success or failure of the venture. In regard to this we leave to others to decide and only desire to call attention to certain features which meet with our approbation and for which we congratulate that gentleman upon the evidence of his most excellent good sense.

From the local daily press, which reported the venture at some length, we clip the following statement in regard to the fate of the patent medicine advertisements which previously had occupied prominent spaces in its advertising and reading columns.

“Advertisements of liquor houses, cigar stores, and patent medicines have all been barred from the *Sheldon Capital*. The new editor has been busy for several days blue-penciling these advertisements running regularly in the *Capital*. Half a dozen medical advertisements fell under the ban of the blue pencil. Patent medicine advertisements of every kind and character are excluded on the broad ground that they do more harm than good ”

Whatever may be the general makeup of the paper in question, its usefulness and attractiveness will not be marred by the elimination from it of patent medicine advertisements. On the other hand, it is doing a commendable act in protecting its readers from the temptation to use for their real or imaginary ailments these articles so blatantly advertised, from which only seldom is any benefit derived, and often harm.

This feature of newspaper reform the lay press in general may well emulate, though it is highly improbable that such a condition will be realized in the near future. The large sums of money that flow into

the treasuries of the newspapers from these sources will continue to still the promptings of conscience as it has in the past.

Of the religious press a better condition of affairs would be expected, but here, too, we find the same worship of the golden calf. It is in this class of publications that the patent medicine manufacturers and the quacks find a fruitful field for exploiting their wares and not infrequently the advertisements found in religious publications are largely of this class.

To the religious press in particular the example set for them by the Reverend Mr. Sheldon appeals with especial force, and one which we hope will not go unheeded

THE DEFEAT OF THE OSTEOPATHS IN KENTUCKY.

Whatever else may be its shortcomings, the State of Kentucky has earned for itself, for its efficient State Board of Health, and for its eminent jurists, the admiration and esteem of the entire medical profession in the United States. It showed its high appreciation of the obligations due to the members of a charitable and a long-suffering profession when it enacted laws for their protection through an efficient State Board of Health. By this means the charlatans and quacks have been driven from her borders and have been compelled to seek other localities where their practices are tolerated.

The weight of this law has fallen heavily upon the so-called "osteopaths," who sought, by mandamus proceedings, to prevent it from being enforced against them. Judge Toney, of the Law and Equity Division of the Jefferson Circuit Court of Kentucky, denied their petition and ruled as follows:

1. The statutes of Kentucky against empiricism are constitutional.
2. Whether a school of medicine, from which a party holds a diploma is a reputable medical college, is a question alone and exclusively for the State Board of Health to decide.
3. Mandamus will not lie to compel the said Board to decide a

particular way. Their act is quasi-judicial and is not subject to mandamus.

4. On the merits, held that the American School of Osteopathy, at Kirksville, Mo., from which the plaintiff holds a diploma, is not a reputable medical college, and that the State Board of Health is right in refusing to allow the plaintiff to practice osteopathy in this State.

This will enable the Kentucky State Board of Health to act vigorously against all persons who are not qualified to practice medicine and against those who are endeavoring to practice medicine while professing not to do so

The action of the Kentucky authorities will greatly encourage the members of the profession who in other States are striving to secure the enactment of better laws to regulate the practice of medicine.

The Western Ophthalmological and Oto-Laryngological Association will hold its Fifth Annual meeting in St. Louis, April 5-7, 1900. An interesting scientific and entertainment program has been prepared.

The Plague Reported to be in San Francisco.—Under the date of March 6th, the daily press publishes the following report from San Francisco:

"A suspicious death occurred in the Chinese quarters this evening, and upon making an examination of the corpse the health officer declared that the coolie had died of the true bubonic plague. Immediately upon the announcement, police of the city were ordered into that quarter and at midnight three hundred patrolmen had cleared it of all whites and established a cordon about the 25,000 Chinese therein. The pest is supposed to have been brought here from Honolulu by one of the transpacific steamers."

Since that time, however, no further statements have been made confirming the above and it is presumed that it was a mistake in diagnosis. It is to be hoped that such was the case and that it may be kept from reaching our shores.

SOCIETY PROCEEDINGS.

ST. LOUIS MEDICAL SOCIETY.

*Meeting of February 10, 1900; Dr. William Johnson,
President pro tem., in the Chair.*

A Case of Appendicitis.

DR. A. H. MEISENBACH reported a case of appendicitis and showed the specimen removed. The patient, a young man, 24 years of age, gave a history of previous attacks of colic. When seen he had a temperature of 100°F., pulse 80, pain and muscular rigidity in the right iliac region, nauseated and vomiting. The patient was moved to a hospital and operated upon. The appendix was found congested, tense, adherent to the caput coli, and was removed. On section of the appendix no obstruction was found, the pathological change appeared to be confined to the mucosa and muscular walls. This was probably one of those conditions which have been described as a circular constriction or a constriction of the circular fibers of the appendix producing a stenosis of the vessels in the wall of the appendix and a train of symptoms such as are found in the catarrhal forms of appendicitis.

The trend of surgical opinion is at present toward that of early operation; the virulence of the pus in an appendiceal abscess is very marked and it becomes a question whether the peritoneum can take care of this material when it is thrown out into the abdominal cavity, and the success of the operation depends on the completeness with which the peritoneum can be protected from infection during the operation. Where the abscess cavity has been shut off from the abdominal cavity by adhesions, this should be opened and drained, leaving the appendix for Nature to take care of. He thought that the operative technique, as now generally used, was faulty, in that the incision was

too short, and that a free incision which will give better inspection and greater room for work, will be an advantage both to the surgeon and to the patient.

DR. I. N. LOVE thought that cases of appendicitis are often neglected. He deplored the habit of giving an anodyne for every abdominal pain, but that the patient should be watched until a correct diagnosis can be made and then the proper measures applied. He favored the short abdominal incision and thought from his own observations and from the work of others that better results were obtained by using the *tactus cruditus* of the gynecologist with small incisions.

Discussion on a paper read by DR. L. E. NEWMAN (see page 166 of this number) entitled

A Case of Secondary Post-Partum Hemorrhage.

DR. R. M. FUNKHOUSER mentioned an instance of post-partum hemorrhage occurring 24 hours after delivery in a bleeder who gave a previous history of hemorrhages from other situations in the body. In this case ice proved unsatisfactory and the hemorrhage was controlled by packing the uterus with gauze soaked in Monsell's solution of iron and tannic acid, at the same time the fundus uteri was held by a nurse for 12 hours. Normal salt solution was used subcutaneously to replace the loss of blood. He was of the opinion that the use of astringents to the cavity of the uterus together with the tamponade is essential.

DR. J. K. BAUDUY had never confined a bleeder nor had he seen a secondary hemorrhage under the circumstances described in the paper. In past years, when he practiced obstetrics, he always gave a full dose of the fluid extract of ergot as soon as the head was born, carefully manipulating the fundus with the hand. After delivery of the placenta the fundus was grasped and held for an hour, to these measures he attributes the fact that he had had only a small number of cases of secondary hemorrhage. The tendency for Monsell's solution to form hard fibrous coagula and the difficulty in removing them, together with the danger from sepsis when they begin to decompose, caused him to forego its use.

DR. LOVE said that success in the care of the puerperal woman depends largely upon the management during the period of pregnancy. A thorough cleansing of the alimentary tract a few days before labor, a pronounced sedative during the first stage, together with sufficient chloroform to slightly deaden the pain during the second stage, enables the patient to husband her strength. This will save her from the exhausting effects of pain and will enable her to react quickly. He was not accustomed to use ergot. He found that when the patient having been saved from the exhausting effects following continued pain, the liability to post-partum hemorrhage was reduced. He was of the opinion that post-partum hemorrhages were frequently the result of physical exhaustion of the muscular tonicity of the womb. Chloroform was helpful in that it saves the patient from pain; it is conservative in that it leaves the patient in a condition to react at the close of labor; the womb contracts firmly and the patient makes a prompt recovery. Attention to the alimentary tract previous to confinement is important; does not favor injections of iron or any other irritating styptic into the cavity of the uterus, believing that a tampon of iodoform gauze with gentle pressure to be the safest.

DR R. M. KING said the etiology of secondary hemorrhage covers a very large field; it may result from retained placenta or membrane, retained blood-clot, inverted uteri, usually the result of improper management of the third stage of labor, from a fibroma or a polypus, or from a placenta previa. Secondary hemorrhage may occur as early as 6 hours after labor, within two or three days or as late as nine days. A most frequent cause is dislodgement of the thrombi in the venous sinuses; if this occurs a serious bleeding results. From the very accurate history given us, this case was probably due to a blood dyscrasia, a constitutional condition existing during pregnancy when there is more or less of a condition of hemophilia of the blood which may cause secondary hemorrhage. As a prophylactic measure, strychnia to full physiological effect should be given. In active hemorrhage he prefers the use of hot water to that of ice as a hemostatic. For the purpose of diminishing the intensity of the labor pains chloral hydrate is favored to that of chloroform. It is his regular custom to wash out the womb with hot water when there is hemorrhage.

DR. T. A. MARTIN said that opium in large doses was the sheet anchor in secondary hemorrhage; he preferred to wait for some time for Nature to deliver the placenta than to be too hasty; he rarely used ergot, preferring to wait until the womb recovered its tonicity. In regard to strychnia he gives from one tenth to one-seventh of a grain. He does not irrigate the womb unless there is some indication for it, believing that it is unnecessary and meddlesome midwifery.

DR. MEISENBACH believes that ergot is the sheet-anchor in cases of post partum hemorrhage; he gives a spoonful immediately and repeats in an hour. Unless there is an indication for it, uterine irrigation is an unwise procedure. He thought a mild solution of formol would have a beneficial effect in closing the vessels by coagulation, being at the same time a powerful antiseptic.

DR. L. E. NEWMAN.—There is a marked difference between primary and secondary post-partum hemorrhage; primary post-partum hemorrhage occurs at the time of delivery, generally while the accoucheur is present, with agents or means at hands to combat the flow; secondary post partum hemorrhage occurs later, and generally under adverse circumstances as regards controlling the hemorrhage. He had found ice very efficient; the use of salt solution in this instance, he thought injudicious. The routine administration of ergot is not to be commended; the use of strychnia is, in such a case, to be advised; he regards opium as a good, safe agent, and had used morphine once or twice in order to give the patient courage, but was not certain that it had any effect on the hemorrhage.

Dr. Wm. N. Beggs, formerly of St. Louis, Mo., now of Denver, Col., has been chosen editor of the *Colorado Medical Journal*.

Medical Practice in Brazil.—According to a recent decree the holder of a medical diploma from a foreign university of recognized standing is now allowed to practice in Brazil. Formerly foreign physicians desiring to practice in that country were obliged to pass an examination in the Portuguese language.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of February 1, 1900; Dr. Chas. J. Orr, President,
in the Chair.*

Aneurysm of the Subclavian Artery.

DR. L. H. BEHRENS presented a patient having an aneurysm of the second portion of the subclavian artery with a history as follows: Female, 36 years of age, married, occupation laundress. Father and mother dead, the latter died from pleurisy. Knows little of her family. Had severe attack of inflammatory rheumatism fifteen years ago, confining her to her bed for three months; has had frequent attacks since. Contracted syphilis nine years ago; the eruptive stage aborted by treatment. Two years ago noticed swelling of veins in left hand, at the same time there was pain extending down the arm, but there was then no lump on the neck. First noticed a pulsating tumor in the neck last July. Having pains in the neck and down the arm, she was treated for rheumatism. The enlargement in the neck is increasing in size. A peculiarity to be noted is that the swelling causes pressure on the vein, and that there are also lesions of all the valves of the heart. The patient suffers constantly, notwithstanding treatment with the iodides, codein, and bromide of sodium.

A Fatal Case of Peritonsillar and Post-Pharyngeal Abscess.

DR. ERNEST H. COLE reported a fatal case of peritonsillar and post-pharyngeal abscess. Two years ago, a child, $3\frac{1}{2}$ years of age, of Italian parentage, was brought to him. On examination there was found a large peritonsillar and a retro-pharyngeal abscess. The child had been under the care of another physician, but being unable to attend it on account of an attack of pneumonia, had given up the case. The child had been taken to several other physicians at that time, but each refused to attend to it. The father realized the gravity of the condition, but was willing to take any risk in order to help the child. The pulse of the child was 120, breathing slightly labored, but there

was no cyanosis nor enlargement of the glands in or about the throat or neck. The most prominent point of the abscess was then punctured to a depth of not more than one-half inch; only three or four drops of pus oozed out. He was about to congratulate himself on the result when he observed that the child's eyes became set and glassy, and in spite of the use of stimulants, electricity, etc., the child was soon dead. He was positive as to the escape of pus after the puncture. No pus went into the larynx, nor was a blood-vessel punctured, because there was no blood shed. He felt that he had done his duty, notwithstanding the fact that three other physicians refused to have anything to do with the case. The father of the child returned next day, accompanied by five others, bringing another boy also having a peritonsillar abscess; this was quickly lanced and in a couple of days the child had fully recovered.

DISCUSSION.

DR. CHAS. SHATTINGER said that he had found the evacuation of pus in peritonsillar abscess to be a matter of the greatest practical difficulty. He guided himself by all the known methods regarding the locating of the pus, using bimanual palpation as well as simply palpating inside the throat; he had tried to get fluctuation with the probe and finger, and the finger alone, and judged by the lighter points of the mucous membrane where to incise; in spite of that, he had sometimes made four or five punctures and not found pus. The purulent collection, in the great majority of cases, is between the pillars of the fauces on the one hand, and the internal pterygoid muscle on the other, the collection not being in the tonsil but outside of it. With this knowledge to guide him and a willing patient, he has made a number of punctures and still he had been unable to find pus, but often the next day he had found the abscess ruptured and the pus escaping through a route entirely untried—usually through a tonsillar cyst. From his own experience, he is inclined to wait. If dangerous symptoms should arise he would not hesitate, but usually waited and trusted to spontaneous evacuation. He felt rather humiliated at this because he considered it bad practice to allow pus to remain in the body.

DR. GEO. HOMAN asked an explanation of the cause for the bad breath which is almost universally complained of in cases of children

with sore throat. He had seen a case recently, without much fever or swelling, in which this was so pronounced that it was dwelt upon by the mother at much length. In that case the tonsil had a rather ragged appearance, perhaps due to former inflammations, and he thought the bad breath was caused by the retention of food particles therein and resulting decomposition.

DR. L. H. BEHRENS mentioned two similar cases of peritonsillar abscess in both of which scarification had been used without effect. One, which ruptured spontaneously, the other was opened by incision. It is an easy matter to incise where sight or touch can be used, otherwise the best possible attempt should be made.

DR. A. H. MEISENBACH thought the dangers were not alone pressure on the nerves but upon the upper air passages. Owing to the danger of pus escaping from point of incision and causing suffocation by its entrance into the larynx, he prefers the external route rather than through the throat, as this affords better opportunity for the evacuation of the pus and free drainage. He regretted that tracheotomy and artificial respiration had not been performed even after the patient appeared to have died. In all work, especially where chloroform is used, one should be ready to perform tracheotomy immediately; very often this will result in success. In this case he thought the cause of the child's death was probably a septic infection, possibly a sudden paralysis of the heart, such as often occurs in acute conditions due to septic processes, as in diphtheria. Possibly in this instance it might have been caused by embolism.

DR. FRANK HINCHEY reported (see page 176 of this number) a case of

Placenta Previa.

DISCUSSION.

DR. B. M. HYPES said that twenty-five or thirty years ago placenta previa was treated on the expectant plan, namely, to keep quiet, avoid stimulating food, and drinks, etc., calling the physician as soon as dangerous symptoms arose. At present, active interference is practiced, such as the production of abortion or premature labor as soon as a

positive diagnosis of the condition can be made without waiting for dangerous symptoms to arise. In all cases of placenta previa the life of the mother as well as that of the child is in danger, especially when hemorrhage or other symptoms are present. He mentioned two instances of placenta previa in which active treatment was delayed, with the result that one died from the hemorrhage, and the other having barely escaped dying on account of the hemorrhage. He had reached the conclusion that when the diagnosis of placenta previa was made at any time during pregnancy, save perhaps, during the sixth month, when, by waiting two or three weeks, the child may become viable, the proper treatment was to induce abortion, or premature labor. It is the safest for the mother; and he considered the saving of the life of a mother of greater importance than the possible saving of the child under such circumstances. The palliative treatment of these cases has given fearful statistics, from 30 to 40 per cent. of mothers dying, and 60 to 80 per cent. of children; while, according to the statistics of Mueller, in 160 cases there was not a single death of the mother where the abortion was induced prior to the seventh month. The longer gestation continues the greater is the danger to the mother. We also know, from statistics, that premature labor gives far better results to both mother and child than do births at full term. This statement is corroborated by Lusk and other noted authorities. Knowing the condition of the uterus at full term, this statement is theoretically true, and practically it has the backing of some of the best obstetricians and practitioners. He believed, with our present knowledge and ability to prevent sepsis and post-partum hemorrhage and other dangerous conditions, that abortion ought to be induced prior to viability and premature labor as soon as viability has been established in any case of placenta previa.

DR. W. B. DORSETT believed the Barnes bag a failure. It will not dilate the uterus at the point where dilatation is desired, it dilates at the point of least resistance. If it is successfully introduced past the internal os, it will then dilate into the uterus. If the case is one of placenta previa centralis, the bag will simply push the placenta previa away from the uterine walls and a concealed hemorrhage is the result. To dilate the uterus the patient is placed on the left side, the perineum

retracted with Sim's speculum, and the vagina tamponed until no more gauze can be introduced. He did not believe that iodoform gauze, aside from the iodoform, did any good. It does not stop the hemorrhage as well as rolls of cotton nor can it be packed in tightly like a roll of cotton.

In considering this subject, he said the mortality was the great question. When we consider the mortality of mothers, from 50 to 75 per cent., it is appalling. The dangers are, first, that of active hemorrhage, and second, that of sepsis, and he thought the matter of sepsis far outweighed the immediate danger of hemorrhage. He said he considered that he had been very fortunate in his practice of obstetrics, having had but four cases of placenta previa, and only two cases of placenta previa centralis. He believed that if there was ever any excuse to terminate gestation prior to the viability of the child, it was in the treatment of placenta previa. He spoke of one patient whose life he thought would have been saved had she not been a Roman Catholic and positively declined to allow the induction of labor before the full term. She was in good condition and at the third hemorrhage he thought labor could have been brought on and the woman saved.

Speaking more particularly of placenta previa at term, he said nearly half of these cases are cases that have been recognized as placenta previa long before they went to term. They are cases that have been postponed. In placenta previa centralis, when it is decided to deliver the woman, the physician should pass his hand right through the placenta, get hold of the feet of the child and draw it down so as to get the breech impacted against the bleeding surface and stop the hemorrhage. In the last case of this kind that he delivered he followed this procedure and did not let go until he had the feet out and the placenta around his arm. This he believed to be the only treatment in such cases—to go right through the center and produce podalic version. A case he had about three years ago was a placenta previa with twins. He watched the case very carefully three or four months and was called several times in the night to see the woman. These hemorrhages occur most frequently in the night. During sleep the hemorrhage takes place and the patient suddenly awakens to find the bed wet with blood. In this case he had a nurse in the house and everything kept in readi-

ness for accidents, but each time the hemorrhage was quite severe before he could arrive at the house. About the seventh month the patient became septic and had a violent hemorrhage. He at once began to deliver. The limbs of the child were extended upon its body in such a way that they lay by the side of the cheeks, and the arms were folded over the legs in such a manner as to make it almost impossible to get the hand up and flex the legs in order to bring them down one at a time, or both together. This position of the child caused a great deal of trouble. He put the woman under chloroform, and then got one leg down through the placenta and delivered the first child. The second was a vertex presentation and delivered with the forceps. Unfortunately, the hemorrhage was so great that he was unable to deliver the second placenta. He felt that if he worked any more with the patient, she would simply die on the bed. Consultation was sought and it was agreed to wait until the next day. The vagina was tamponed, and the next morning the patient was placed on the table. The hemorrhage from this second placenta was exceedingly great, but they succeeded in extracting it and tamponing the uterus. The patient, however, died on the second day from sepsis.

Sepsis, he said, he considered the greatest danger. Just how far the administration of antitoxin in these cases was applicable he was not prepared to say, as he had not had any experience with it. He believed, however, that it was the duty of the physician to try the antitoxin whenever a case of sepsis was recognized and said he would certainly do so in future cases.

The terms *placenta marginalis* and *lateralis* are used synonymously and we are frequently more or less in the dark when talking about these cases. He did not think the term *lateralis* a good one, the term *marginalis* being much better.

In regard to inducing abortion or premature labor, if there was ever any excuse for the shortening of labor at any time during pregnancy, whether during the third, fourth, fifth, or sixth month, or in fact almost up to term, it was certainly justifiable in *placenta previa*. He believed more live children were delivered to-day than was done fifteen years ago. He could say that he had never yet done a craniotomy on a live child, though he had done it on a dead child. He has also per-

formed Cesarean section and he believed this operation was the coming operation for many of these cases. Cesarean section is being done now more than ever before in cases of placenta previa, and he thought it ought to be looked to as the possible suitable operation under these circumstances. His view on this subject was so pronounced that if he had a relative, or anyone closely akin to him, afflicted with placenta previa and he was satisfied that that was the trouble, in view of the danger from active hemorrhage and the danger from sepsis, he would certainly advise induction of labor.

DR. A. H. MEISENBACH mentioned his experience with three cases of placenta previa. In the first two the womb was dilated by the hand, podalic version performed, and delivery accomplished with only the loss of the child in the second case. Cesarean section was performed on the third, both mother and child were lost. He favors dilatation by the hand; recently a German physician has suggested the use of dry flat aseptic sponges introduced as far up as possible, these absorb fluid and expand, causing dilatation. Intra-venous injection of normal salt solution he thought to be a valuable agent in combatting the shock following this condition. He, too, regarded Cesarean section the coming operation for this condition but that it should only be performed in a hospital and not in a dwelling where it is almost impossible to perform an aseptic operation.

DR. HINCHEY: The passage of the child through the cervix did not seem to dilate the canal much and it was only by passing the fingers up between the child's head and the canal and pulling the cervix back that the head was delivered. He had selected iodoform gauze because he thought that that would be sterile and would pack tighter. He packed the uterus with a large quantity of gauze with the patient lying on her back. He believed he got a better result from packing with the patient lying on her back than if she were lying on her side. Authorities state that the hemorrhage is often quite late. It was this that made him doubt whether it was a case of placenta previa or miscarriage, believing at first that it was a miscarriage, but the patient denied having suffered any pain with the hemorrhage.

DR. HYPES suggested that an early hemorrhage was not a hemor-

rhage from a placenta previa, because the placenta is not formed until the third month.

DR. DORSETT said that one of the causes laid down by authorities for placenta previa was the dislocation of the ovum from its original site, as by a fall or a relaxed condition of the uterine walls, or a previous lacerated condition of the cervix where the laceration extends beyond the internal os. These are some of the causes which brings about the lodgment of the ovum in the lower segment of the uterus so that a hemorrhage might occur and not be the result of a placenta previa but simply from a detachment of the placenta or the villi of the chorion.

The Homeopathic Superintendent of the Fulton Insane Asylum Resigns.—Dr. J. T. Coombs, the homeopathic physician whom Governor Stephens, three years ago, appointed Superintendent of the State Insane Asylum, No. 1, at Fulton, Mo., has resigned. Ill health is given as the cause. Dr. Coombs' administration has been of unsavory reputation; once previously his resignation was tendered by request of the Board, as a result of an investigation of charges of drunkenness and immorality, which were proven against him. In spite of this fact Governor Stephens refused to accept his resignation and he was allowed to retain his position. Dr. Coombs is related to the family of Governor Stephens by marriage.

Limiting the Output of Doctors in Russia.—The Russian Government has grappled with the question of the over production of medical practitioners in a drastic manner peculiarly its own. By a recent decree of the Minister of Education the admission of first-year students by the several medical faculties throughout the empire is restricted to a fixed number. The University of Moscow is limited to 250, Kieff to 200, Charkow to 175, Dorpat to 150, Warsaw to 100, Tomsk to 120, and Kasan to 100. The total number of first-year medical students in the dominion of the Czar must, therefore, not exceed 1,095. This number does not include the students of the St Petersburg Medico-Military Academy, which is allowed to admit 250 first-year students —*British Medical Journal*.

REPORTS ON PROGRESS.

MEDICINE AND THERAPEUTICS.

Latent Cancer of the Stomach.

William Osler and Thomas McCrae (*Philadelphia Med. Journal*, Vol. V, No. 5) report a number of very interesting cases of latent cancer of the stomach. In some of them there were no symptoms whatever pointing to gastric disease; in others the gastric symptoms were, during life, thought to be only secondary. The cases are briefly summarized as follows:

CASE I.—Diagnosis of nephritis, arterio-sclerosis, and pleurisy; no gastric symptoms. Autopsy showed a large cancer of stomach and esophagus.

CASE II.—General edema; albumin and granular and hyalin tube-casts in urine, rapid emaciation; vomiting at onset, but none during his stay in hospital; diagnosis of nephritis. Autopsy showed a large scirrhus cancer involving nearly the whole of the stomach and extending to the esophagus.

CASE III.—Tuberculosis and pneumothorax, all the symptoms those of chronic consumption; no stomach symptoms. Autopsy showed cancer of the lesser curvature of the stomach.

CASE IV.—Multiple thrombi of superficial cutaneous veins, profound and progressive anemia; no gastric symptoms. At the autopsy, cancer of the pylorus was found.

CASE V.—Paresthesia in feet; symptoms of ataxia; gradual paraplegia; headache; marked pain in neck; development of a tumor in the right side of the pelvis; no stomach symptoms. Autopsy: Primary carcinoma of lesser curvature of the stomach; secondary masses in the abdominal glands, the right ilium, and the femur.

CASE VI.—Pains in the right arm and right side of neck with wasting of the muscles of the right arm; inequality of the pupils; de-

velopment of nodular masses on the ribs; diagnosis of cancer, but primary disease not suspected; no gastric symptoms. Autopsy showed cancer of lesser curvature of the stomach; a nodular mass compressing the brachial plexus; metastases in tenth dorsal and first lumbar vertebræ.

CASE VII.—Onset of illness with ascites; two months later, aspiration of bloody fluid; recurrence of ascites with swelling of the legs; drainage of peritoneum; recognition of malignant disease of the stomach. Autopsy showed extensive cancer of the stomach.

In reviewing this interesting series of cases, and particularly in the study of the autopsy records, one is astonished to notice how extensive and widespread the disease may be with practically no symptoms. For more details, concerning both histories and autopsies, the reader must be referred to the original article.

Injections of Gelatine in Hemophilia.

F. Krause (*Excerpta Medica*, Vol. IX, No. 5; *Münchener med. Wochenschr.*, No. 49, 1899) reports a case of hemophilia cured by injections of gelatine. The family history showed that a maternal uncle of the patient had bled to death after the extraction of a tooth. The patient, in his early childhood, had frequently had severe epistaxis. During the past eight years he had suffered from frequent attacks of swollen joints, more than one being usually affected at once. In view of our helplessness in cases of this kind, and of the good results following the injection of gelatine salt solutions in aneurysm, it was resolved to attempt that treatment in this case. The result was surprising. Whereas, hitherto the accumulation of blood in the left knee (which of all the joints had been most swollen) had returned 24 hours after the joint had been aspirated and washed out, the blood squirting out of the puncture opening in a large stream as soon as the thoroughly bloody dressing had been removed, now, after the injection of 200 c.cm. of a one per cent gelatine salt solution, not a drop of blood entered the joint. Five more injections of 200 c.cm. of a two and a half per cent. solution were made, partly into the joint and partly subcutaneously. Since then the patient has had no more hemorrhages into his joints or otherwise and his anemia has nearly disappeared.

In view of the harmlessness of the above procedure, and considering the uselessness of other therapeutic measures in hemophilia, it would seem that the injection of gelatine salt solutions are at least well worth a trial in this disease.

The Dietetics of Anemia.

Prof. J. C. Hemmeter, of Baltimore (*Philadelphia Med. Journal*, January 20, 1900) discusses the absorption of iron from the gastro-intestinal tract and the dietetics of anemia. The ordinary preparations of iron are absorbable only to a very small degree. Bunge, indeed, has expressed the conviction that iron given as medication is not at all absorbed but excreted in its entirety by the gastro-intestinal tract. More recent investigations have tended to modify this statement. It seems probable that the iron salts, in whatever form they may be given, are acted upon in the stomach by the hydrochloric acid and there converted into chloride of iron. "This is true alike of all the inorganic and the many so-called organic preparations, excepting possibly a part of the nucleo-albumins, which then follows the same course as that of the food-stuff. After the iron-bearing compound has been converted into a chloride, owing to the strong affinity existing between the iron and the sulphur, the iron is quickly attacked by the sulphur compound with the formation of an insoluble sulphide of iron. With this explanation, the iron administered to the patient, instead of entering into the blood in some mysterious and inexplicable manner, and in defiance of all the well-established chemic laws, now obeys the accurate laws of chemistry and appears in the feces in the same quantity in which it was administered but as a black sulphide of iron. Hence, the black stools following the exhibition of any and all preparations of iron that are of any value as therapeutic agents.

This quick satisfaction of the sulphur compounds by the action of the active chloride of iron prevents the destruction of the iron compounds (nucleo-albumins) contained in the food-stuffs. These latter being thus protected are absorbed and are enabled to relieve the anemia whereas, without the administration of some ferruginous drug, they would have been destroyed by the sulphur compounds before they would have been absorbed.

The above statement expresses the most generally current theory regarding iron medication. Hemmeter, though he believes it fundamentally true, holds that it is not exhaustive, as it does not explain all the observed phenomena. Thus he reports a number of cases in which the gastric juice was devoid of any free HCl, but in which iron salts, other than the chloride, caused an absorption of iron from the gastrointestinal tract. Moreover, two anemic patients, who could not tolerate iron by the stomach in any form, were cured by injecting iron by hydrogen in the form of enemas.

It would seem accordingly that our knowledge of the method of absorption and of the absorbability of iron compounds is as yet fragmentary and that none of our theories satisfactorily accounts for all observed phenomena.

TAUSSIG.

NEUROLOGY.

The Care of the Recent Case of Insanity.

C. B. Burr (*Indiana Medical Journal*, January, 1900) offers some very useful hints to the general practitioner in his efforts to properly diagnose a recent case of insanity, and makes suggestions as to the propriety of commitment and concerning treatment. He maintains that there is a growing interest on the part of the general profession in the subject of mental disease; that a general practitioner may not at this time say indifferently: "I know nothing of insanity." Confronted with a case of mental excitement, or depression, or confusion, an effort is now always made to properly classify the condition, and to discover the cause, just as is done with any other illness.

Be the diagnosis what it may, the indications for treatment are clear, the object being to reduce excitement and strengthen self control. The patient should at first be placed in bed and cared for as if physically ill.

Two judicious, level-headed, quiet and unobtrusive nurses, one for the day the other for the night, should be provided at once. Members of the family should be excluded from the sick-room.

What is necessary for the patient should be done by the nurses with the least possible show of force and without argument.

Burr thinks an incredibly large proportion of nervous diseases arise from constipation and resultant toxemia and advises measures to combat this condition as prophylaxis. In the constipation attendant upon the insane states, there is no remedy so good as calomel in divided doses; thereafter effervescent salts, aperient waters, etc.; enemata, where they can be given without too much disturbance, are distinctly useful. Attention to the bladder and kidneys should not be neglected.

In mental excitement the ice cap to the head and hot water bags to the feet is recommended; warm baths with cool effusions reduce excitement and promote sleep. The continued administration of hypnotics is condemned; chloral is chiefly to be used, sulfonal and trional being used as alternates.

In advocating the bed treatment, Burr does not fail to recognize the value later of exercise in the open air.

The bitter tonics—strychnine, quinine, etc.; hypophosphites, malt preparations and the mineral acids, together with liberal feeding, are recommended. Forced feeding is discussed and a warning given as to care in inserting the nasal tube. Salt glows, with cool effusions, the static breeze applied by the hand of a masseur are warmly indorsed in depressed conditions.

Burr's article can not be easily compressed and a thorough perusal of it will well repay the time spent upon it.

Spinal Cord Changes in Cases of Cerebral Tumors.

Frederick E. Batten and James S. Collier (*Brain*, Winter, 1899) report findings in 29 cases of cerebral tumor. (The article is generously illustrated with excellent plates). Optic neuritis in its early, marked or late form, was present in all cases except one, and in this case there was marked degeneration of the posterior columns of the spinal cord. Their conclusions are as follows:

1. That degeneration of the posterior columns of the spinal cord frequently occurs in cases of intracranial tumor, that is, about 65 per cent.

2. That such degeneration is more liable to affect the spinal cord in the cervical region than in the dorsal or lumbar regions, and is more marked in the postero-external than in the postero-internal columns.

3. That such degeneration is of root origin, and arises from the point where the root enters the spinal cord; the posterior roots are always less affected than the posterior columns, and may show no degeneration.

4. That such degeneration is due to traction on the posterior roots by the distention of the arachnoid, owing to increased intracranial pressure, and especially such as tends to rapid dilatation of the ventricles and the subarachnoid space in the spinal cord.

5. That such degeneration is independent both of the situation and the nature of the tumor, except in so far as their liability to give rise to the preceding condition is concerned.

6. That optic neuritis bears no relation to the occurrence of posterior degeneration.

7. That absence of the knee-jerks (except in the semicomatose state) indicates posterior degeneration, but that their presence does not negative such a condition, and absence of the arm-jerks has the same significance.

8. That degeneration may occur in the direct cerebellar tract; such degeneration being directly due to pressure on the cervical region of the cord.

Chronic Stiffness of the Vertebral Column.

In a recent number of the *COURIER* we reviewed an article by Zenner, of Cincinnati on this subject. Charles L. Dana (*Medical News*, November 25, 1899) gives the history of the condition, cites recent observations by others and reports three cases of his own.

He recognizes two forms of the disease, the first that referred to by Struempell and described by Marie as *spondylosis rhizomyelia*, in which the malady begins in the hip joints and progresses steadily upwards, affecting the spine and shoulder-joints. This is accompanied with a very marked rigidity of the spine and some kyphosis, but this is not always very great. The patient suffers little pain and does not

have intercostal neuralgias or paresthesias, or shooting pains in the nerves of the leg or arm.

The second type is that described by Bechterew. Here the trouble begins in the spine primarily and is accompanied with a progressive stiffness and arching of the back, which may become very great. The patient suffers a great deal from intercostal pains, while the joints of the hip and shoulder are not very much, if at all involved.

Dana thinks spondylosis rhizomyelia is a form of arthritis deformans essentially allied to that trouble in etiology, symptomatology and progress, while Bechterew's cases suggest that disease in some cases, in others, syphilitic meningitis.

BLISS.

OPHTHALMOLOGY.

The Changes in the Eye After Ligature of the Gall-Bladder.

W. Dolganoff ("An Experimental Study of Ophthalmia Hepatica," *Archives of Ophthalmology*, September, 1899). The subjects chosen were dogs. First subject: (1) Edema of the optic nerve and the retina. (2) Distension of vessels of the retina and the choroid. (3) Infiltration of the optic nerve and nerve-fibers, and ganglion cell layers of the retina, with leucocytes. (4) Fibrinous exudation between the choroid and the retina and in the choroid itself. (5) Beginning thrombosis of individual retinal vessels. (6) Increased chiasms of the nuclear layers of the retina; and (7) a fibrinous exudation in vitreous. Second subject: Similar changes as in first, with marked neuritis and perineuritis. Third subject: Changes characterizing the beginning of an inflammatory process of the retina. Fourth subject: Exudative inflammation of the retina and the choroid, and a beginning inflammation of the optic nerve.

The author draws the following conclusions:

1. Coats of the eye undergo marked inflammatory and degenerative changes.
2. Changes also in stroma of the connective tissue, in the vascular system, and in the nervous elements.

3. Changes in the connective tissue consist of proliferation of the nuclei.

4. Changes in the vascular system comprise distension of the vessels, swelling of the endothelium, perivascularitis, enlargement of the spaces about the vessels, hemorrhages, and exudations.

5. Affections of the nervous system consist of various degrees of degeneration of protoplasm of the ganglion cells, alterations of the nuclei, and enlargement of the spaces about the cells.

All these changes point to a distinct cause for their origin and development and can not be considered simply the expression of lowered general nutrition.

Well-Marked Tabes Dorsalis Without Loss of the Pupillary Reflex.

D. DeBuck (*Med. Weekbl.*, September 16, 1899) refers to a man, 50 years of age, for twelve years the subject of locomotor ataxia, whose case is interesting (1) in that there was increase of knee-jerk with loss of the tendo-achillis reflex, (2) in that the auditory nerves were profoundly involved, and (3) in that no Argyll-Robertson phenomenon could be elicited. The light reflex seldom escapes involvement in long standing tabes. The disease began in the neurons of the left hand passing up to the level of the upper dorsal and lower cervical segments of the cord, and then without in any way affecting the cilio-spinal connections, passed on to interrupt the functions of the auditory neurons. According to G. Wolf, the loss of the pupillary light reflex depends upon a lesion of the posterior columns of the cervical portion of the cord. Further, Hoeben and Huet have shown that the sympathetic neurons proceed from the cervical cord upward to the central gray matter surrounding the aqueduct of Sylvius and the ganglion Habesaulæ. This same central gray matter, according to Bechterew, is the part of the light-reflex from the optic nerve to the oculo-motor nucleus. In the presence of normal optic nerves, an Argyll-Robertson pupil is explainable only by assuming a lesion of the gray matter of the Sylvian aqueduct, or of the association system between the oculo-motor nucleus and the cilio-spinal center, or finally, of the last named center itself. Both the latter are in connection with the cervical cord. DeBuck finds that

the clinical phenomena in his case do not support Wolf's findings, unless it is assumed that in DeBuck's case the tabetic process reached as high as the seventh cervical segment, but spared the sixth and the fifth segments. This is, in all probability, what happened.

Amblyopia From Hemorrhage.

W. A. Holden (*Archives of Ophthalmology*) has experimentally investigated the blindness observed after profuse hemorrhage, which has been variously accounted for. He operated on two healthy dogs and later examined the eyes microscopically. The pathologic conditions were edema of the nerve-fibers and ganglion cell layers of the retina, and some ganglion cells beginning to show signs of degeneration. This will explain the ordinary cases of amblyopia following hemorrhage. In those unusual ones, in which the sight disturbance takes the form of a central scotoma, while the ophthalmoscopic changes indicate retrobulbar neuritis, some special explanation is required which can not be given, except after pathologic examination of each particular case. He also investigated the suddenly developing amblyopia which has been observed after insection of methyl alcohol, and finds that it comes under the same category, it being due to the nutritive disturbances in the ganglion cells of the retina.

SHOEMAKER.

PEDIATRICS.

The Morbidity of Children at Various Ages.

Escherich (*Jahrb. f. Kindhke.*, Vol. LI, No. 1), after an exhaustive study of the diseases in childhood, in Gratz, arrives at the following conclusions:

1. Childhood shows a high morbidity which gradually diminishes from the end of the first year. The character and course of the disease varies according to age and is caused, first, by the physiological peculiarities of the organism, and second, by the external conditions and habits of the children.

2. In infancy, the insufficiency in the development of the organs is prominent and reveals itself in functional weakness of the digestive

apparatus, and inadequate adaptation to the requirements of extra-uterine life.

3. In the second half of the first year appear constitutional diseases which are characterized as disturbances of the growth of the organism, such as rachitis, anemia, scrofula. The acme of these is reached in the second or third year. In consequence of uncleanly surroundings, so called filth diseases appear, namely, diphtheria, tuberculosis, stomatitis, helminthiasis, etc.

4. From the fifth year appear, simultaneous with the commencement of entrance into school, the acute exanthemata and their sequelæ, such as heart and kidney diseases. Certain functional diseases also appear as a result of the excessive activity. Gradually the character of the diseases is altered so as to resemble more and more that in adults.

5. The chronic infectious diseases—syphilis and tuberculosis, are present in inverse ratio, the first gradually diminishing in frequency soon after birth, while the latter increases with age.

6. The successful overcoming of the ever-increasing demands strengthens the organs, and the endurance of an acute infectious disease usually results in lasting immunity; consequently the body becomes better prepared to take up the struggle for existence in later life.

Childhood must, therefore, be regarded as a period of adaptation to various climates, conditions of life, and disease-producing causes. It is the duty of the physician to watch over this process of adaptation and correct any great disproportion between the evil influences and the existing power of resistance.

Aneurysm of the Aorta in the Infant.

Rogers (*Pediatric*, August 15, 1899) reports such a case in an infant, ten months of age. This is a most unusual lesion in infancy. Nothing was found in the family history or in the infant's previous condition that might throw some light on the origin of the lesion. The infant was very anemic, and a loud, systolic murmur could be detected all over the precordium but was loudest over the pulmonary region. The infant died suddenly. The post mortem examination revealed evidence of a recent pericarditis. The aortic valves were glued together and just a little above them was a ragged hole which was the

opening of a small aneurysm which lay between the right auricle and the pulmonary artery.

Landry's Paralysis.

Saltman (*Jahrb. f. Kinderhkde.*, 1900) reports a case of Landry's paralysis. The patient was a girl, 11 years old. She suddenly became sick with fever and severe pains in feet and legs. The pain radiated to the trunk and to arms. This was followed by paralysis of lower limbs and successively the muscles of the trunk and upper extremities became involved. In three weeks the child was perfectly helpless. Bronchial catarrh followed. The pulse became accelerated, edema of the lower limbs was also present. The paralysis gradually improved under the use of galvanism, warm baths, salipyrin, expectorants, and excitants. But what particularly led to recovery were inunctions of mercury which were used for a week at a time with remissions lasting a week.

Artificial Infant Feeding.

Schlesinger (*Therapeut. Monatschrift*, 1899) holds that the high percentage of proteids in cows' milk is not harmful to the infant. He regards casein as an easily digestible proteid and believes our ordinary belief is not based on exact observation. Undiluted cows' milk is very suitable even for the infants and does not possess a great many of the objectionable qualities of diluted milk. Care should be taken to adjust the proper quantity to the needs of the organism and allow of sufficient interval for complete digestion.

Experience in Artificial Feeding.

Schmid-Mounard (*Therap. Monatshrft.*, 1899, No. 2) says that in his experience artificially-fed infants as a rule take a much larger quantity of food. It was found, too, that infants who take a smaller quantity of food thrive better than those who ingest large quantities. Breast-fed infants on an average ingest a quantity of food equal to 99 calories for each kilogram of weight, while those fed on the bottle average 131 kilograms. In the first few months those infants fed on low proteids, but a good percentage of fat and sugar, thrived best. He recommends for the newly-born a mixture of one part milk and two parts water with the addition of milk-sugar. This is rapidly increased to equal parts of

milk and water, and by the fifth month two-thirds milk and one-third water. He has not obtained as good results from Gartner's milk.

The Infectious Character of Acute Articular Rheumatism and Chorea.

Westphal and Wasserman (*Berl. klin. Wochenschr.*, 1899, No. 29) report a case of acute articular rheumatism. Choreiform movements developed in left arm a month after the onset of the arthritis. The patient died in severe delirium. Autopsy revealed an endocarditis and a nephritis. A micro-organism was cultivated from the blood, which, when introduced into the blood of animals, produced high fever and inflammation of the joints. The organism was a streptococcus very similar to the class which has been supposed to stand etiologically related to rheumatism.

Treatment of Rickets by Suprarenal Extract.

Stoeltzner (*Berl. klin. Wochenschr.*, September 11, 1899) reports his success in rickets, which have been treated by suprarenal extract. Under the use of this extract, there is a rapid improvement of the condition. Craniotabes rapidly disappears, the sweating becomes lessened, and the vasomotor irritability shows a marked diminution. The thorax becomes harder, the teeth appear, and locomotion is rapidly gained. Laryngospasm, however, resisted treatment.

ZAHORSKY.

SURGERY.

The Formation of a Ganglion in the Continuity of a Tendon.

C. Hofmann (*Centralblatt f. Chirurgie*, No. 50, 1899) observed *within* the tendon of the peroneus tertius a cystic tumor which contained the same sort of fluid as that usually found in a ganglion. His patient was 17 years of age, and dated the appearance of the tumor from the receipt of a blow.

In this case we can not accept the old theory of a ganglion being the herniation of the serosa of a tendon sheath through its fibrosa; nor did microscopic examination show that this tumor was a cystoma, in accordance with the theory of Lidderhose.

The author advances no explanation for the development of the growth, which must be an object of interest if only for the reason that it is the first one of the kind on record.

On Some Interesting Points Regarding Perfection of Asepsis.

Carl Beck (*Medical Record*, October 7, 1899) notes many good points, of which the following are particularly valuable: All instruments and materials used in an operation must go from the sterilizer to the patient's body at once. The air should cause the surgeon no anxiety as it is fatal to pathogenic microbes, and those which survive settle to the floor in an hour and a half, especially if the air be damp; hence no operating room is to be swept before surgical work, but the air is to be saturated with water. A surgeon suffering with an intra-oral inflammatory condition can contaminate the air, though the breath of the healthy does not do so.

Beck advises covering the skin-wound with a napkin so that the bacteria ever present there may not reach the wound recesses to be made later. Gloves are recommended and instruments rather than fingers allowed to touch the tissues.

Gall-Stone Crepitus and Friction.

Anders (*International Medical Magazine*, December, 1899) claims that crepitus may corroborate an otherwise doubtful diagnosis. To elicit this sign the patient must be examined in the recumbent position with legs drawn up, when deep palpation is to be made. The hand palpating the flaccid abdominal wall must be, so to speak, hooked behind the bladder and drawn forward. If the patient breathes deeply the excursion of the gall-bladder over the hand may be fruitful. In the author's practice the stethoscope has given a friction sound in a case where no crepitus was to be obtained. An operation demonstrated the correctness of the diagnosis.

The Instruction of Railway Employes in First Aid.

One can scarcely estimate the number of fatalities and the amount of personal suffering that might be avoided if the suggestions of C. R. Dickson (*Railway Surgeon*, Vol. IV, No 15) were only followed. At each railway station he would have a chest containing everything from

a stretcher to antiseptics, ligatures, dressings, bandages, splints and a few simple instruments. Every shop, yard, caboose and baggage car should, besides a similar chest, possess a large number of "first-aid packages," similar to those distributed to the various armies in time of war. Railway employes can in a short time be well enough trained to make these precautions efficient.

A Review of the History and Literature of Appendicitis.

Edebohls (*Medical Record*, Vol. LVI, No. 22) presents one of the most meritorious articles which have recently attracted the reviewer's attention. He gives us the titles of no less than 376 contributions to the literature of this subject, which is of so much practical importance and upon which there is such a diversity of opinion. This mass of information is woven into a readable article by classifying the material according to the leading thoughts presented in each thesis.

Treatment of Fracture of the Patella by Suture of Its Fibrous Capsule.

M. Vallas (*Revue de Chirurgie*, No. 10, 1899) warmly recommends the above-mentioned procedure as being vastly superior to the older operation of suturing the bone itself. He works through a transverse skin incision and opens up the joint cavity freely. By a firm suture of the fibrous capsule the patellar fragments are brought together thus accomplishing a firm osseous and connective tissue union. Fractures of the bone, in which the capsule is not completely torn, are to be treated merely by compression and massage. A diagnosis of the degree of injury is made as follows: Where more than two centimeters space intervenes between the fragments a complete rupture of the capsule may be assumed and operative treatment instituted accordingly.

Uretero-Ureteral Anastomosis for Traumatism.

Markoe (*Annals of Surgery*, Vol. XXIX, No. 6) reports the case of a woman operated upon for a large uterine tumor. For 24 hours after closing the abdomen no urine was voided. Upon reopening the wound both ureters were seen to be dilated to the size of a man's little finger. The right had been constricted in making the peritoneal flap

and was readily liberated, but the last had been ligated and divided. The cut ends were united in a most ingenious manner. A No. 9 catheter was engaged in the proximal and then drawn through the distal end into the bladder and vagina thus invaginating the upper into the lower extremity, after which a circular suture was made. The catheter remained in place five days, and the patient recovered.

Epithelioma of the Breast, Presenting the Symptoms of a Benign Tumor, in a Woman 75 Years of Age.

V. Cornil and E. Schwartz (*Revue de Chirurgie*, No. 10, 1899) observed in this instance an encapsulated growth deep in the breast, unattached to the skin, causing no deformity nor axillary involvement. After amputation of the mamma the tumor was easily enucleated and upon microscopic examination proved to be an adenoma carcinoma. The article is chiefly devoted to a dissertation on carcinoma by the eminent pathologist Cornil. It closes with the pertinent remark that no accurate diagnosis of a breast tumor can be made without microscopic examination. We can, in view of this case, no longer assure a patient that a growth—merely because its history has been an innocent one—is a non-malignant adenoma.

A New Method of Treating and Draining the Peritoneum in Diffuse Peritonitis.

Frederick Bode (*Centralblatt f. Chirurgie*, No. 2, 1900) makes an incision in the median line through which complete eventration is made while a warm salt solution is poured over the viscera. These are covered with hot towels while the perforation is repaired, then 30 to 40 liters of the solution are poured into the abdomen while the intestines are being returned to place. A large drainage tube is run through the mesentery and out both loins, a similar tube having its exit through the laparotomy wound. Through them is run 1000 cc. of salt solution two or three times every 24 hours. The drains can usually be removed after three or four days. The author claims to have attained remarkable results in the pursuit of this method.

BARTLETT.

NOTES AND ITEMS.

The Cuban Medical Congress.—The Executive Committee charged with the organization of the Second Cuban Medical Congress has determined upon the following subjects for formal discussion: Local Anthropology, Medical Topography and Statistics, Yellow Fever, Malaria, Blackwater Fever, Chronic Enteritis of Warm Countries, and Atypical Febrile States in Infancy.

Farms for Consumptives.—A project is about to be launched in Colorado which is apparently of more value in the treatment of consumptives than anything that has heretofore been offered. It is proposed to establish from Denver south a series of plantations, which shall be under State control, but so far as possible will be made self-sustaining by labor of their inmates. These are to be opened to those consumptives who can afford the price of transportation.

Prizes for Original Research.—The pecuniary prizes offered by individuals and by scientific bodies for original investigation and research cause a marked increase in the interest and work in this line. It results in a friendly but eager rivalry to secure the distinction of having been the successful competitor, and results from such competition do much toward the advancement of medical science.

Below are to be found statements of conditions for competition for prizes offered by the Philadelphia Academy of Surgery, and by the Association of Military Surgeons of the United States:

THE SAMUEL D. GROSS PRIZE — ONE THOUSAND DOLLARS.

No essay which the Trustees deemed worthy of the prize having been received on January 1, 1900, they hereby announce that the prize will be awarded on October 1, 1901.

The conditions annexed by the testator are that the prize "Shall be awarded every five years to the writer of the best original essay, not exceeding 150 printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize, shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated

that to the essay was awarded the Samuel D Gross Prize of the Philadelphia Academy of Surgery.

The essay, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 S. 13th street, Philadelphia," on or before October 1, 1901.

Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

W. W. Keen, M.D., J. Ewing Mears, M.D., J. Chalmers Da Costa, M.D., Trustees.

THE SANDER PRIZE.—ONE HUNDRED DOLLARS.

Rules for the competition for the Gold Medal of the value of one hundred dollars, dedicated by Mr. Enno Sander, of St. Louis, for the best paper on Military Surgery, presented at the Annual Meeting of the Association of Military Surgeons of the United States.

1. Competition to be open to all members of the Association.

2. Each competitor shall send three copies of his essay, in a sealed envelope, to the Secretary, Lt Col. Charles Adams, Central Music Hall, Chicago, Ill., on or before April 15, 1900. The essay must be strictly anonymous, but the author must adopt some *nom de plume* and sign the same to the essay, followed by a figure corresponding with the number of pages of the manuscript. A sealed envelope bearing the *nom de plume* on the outside, and inclosing full name and address shall accompany the essay. This envelope to be opened in the meeting of the Association after the decision of the Committee on the Prize Essay has been received.

3. The Committee will designate the essay worthy of the prize, and also in their order of merit those deserving honorable mention. Should the Committee deem proper, it may recommend neither prize nor honorable mention.

4. The successful paper shall be published in the Transactions of the Association.

Col. N. Senn, Surgeon General, I.N.G, Maj. A. C. Girard, Surgeon, U.S.A, Capt. George W. Woods, Medical Director, U.S.N., Committee.

ST. LOUIS
COURIER OF MEDICINE.

VOL. XXII.

APRIL, 1900.

No. 4.

ORIGINAL CONTRIBUTIONS.

Post-Febrile Insanities, Relating Particularly
to La Grippe and Typhoid Fever.

By J. K. BAUDUY, M.D., LL.D.,

ST. LOUIS, MO.,

PROFESSOR EMERITUS OF PSYCHOLOGICAL MEDICINE AND DISEASES OF THE NERVOUS
SYSTEM, MEDICAL DEPARTMENT WASHINGTON UNIVERSITY, ST. LOUIS, MO.

Read before the St. Louis Medical Society, March 10, 1900.

IT is with some feeling of anxiety that I have acceded to the request of the Executive Committee of the St. Louis Medical Society to read a paper upon the above subject, inasmuch as the literature thereof is remarkably sparse. That *post-febrile* insanity exists we can entertain no doubt, and among the etiological factors which lead thereto are anemia, and sometimes, parenchymatous degeneration, the result of excessive temperature elevation.

Now, in order to comprehend the rôle that cerebral anemia plays in this connection, let us for a moment consider the requirements of the nervous system and the conditions of its normal physiological excitability. They are: 1. Constitutional integrity of nerve-substance. 2. Normal circulation of the blood. 3. Normal composition of the blood. 4. Alter-

nations of rest and activity. 5. To these we may add a normal temperature of the blood and perfect vascular integrity.

As regards integrity of the cerebral blood-vessels and constitutional integrity of nerve substance, these have no relationship of a pathological character with typhoid fever; but the abnormal composition of the blood, the result of qualitative changes superinduced by toxic conditions and the presence of a specific and active *materies morbi*, accompanied with great elevation of temperature, are potential factors in the development of post-febrile mental disease, also metabolic changes and tissue oxidation.

Before proceeding further with this subject, it may be well to emphatically state that it is my earnest conviction that active cerebral congestion is not for one moment to be taken into account in the production of such results. It has been clearly proven to my mind that the disturbances of the cerebral functions during the course of fevers, commonly spoken of as "head symptoms," have no relationship to the increased flow of arterial blood in the brain from overaction of the heart or otherwise, but on the contrary, delirium headache and other head symptoms so frequently encountered in the febrile state, are principally attributable to the great elevation of temperature, also to the abnormal quality of the blood and the result of metabolic tissue alterations and parenchymatous degeneration, superadded to which is a disturbance occurring *in the nerve centers themselves* which control the production of heat. Niemeyer truly observes that "Delirium and other severe cerebral troubles are more common in the so-called asthenic fevers, just where the increase of bodily temperature and the production of warmth attain the highest grade, whilst the heart's action is hastened, but *weakened*, and there is no fluctuation to the brain."

We fully agree with Rohé that according to modern views all fever can be traced to disturbance of the thermic nerve centers, especially also in the muscles, which represent the chief thermogenetic apparatus. It is an indubitable fact that heat centers exist in the cortex and some of the basal ganglia, including the medulla, and it is more than probable, as Rohé

contends, that these lower centers stimulate the production of heat, whereas the cortical centers control the action of the lower centers. A recent observer localizes all thermogenetic functions in the *tuber cinereum*. Whatever may be the value of the claims of localization of thermic centers in various situations in the brain, no doubt exists in my mind—as stated before, that all fever can be traced to primary derangement of the nerve centers. This we see more practically and definitely illustrated in the development of what I might be permitted to call pure and uncomplicated *neurotic* fevers, which are in no way associated with the phenomena of inflammation, and can have no possible relationship to ordinary febrile phenomena, conditions and processes. To further corroborate this view, we would refer to the existence of “*hysterical fevers*” described by Boulay and other observers. In some of the cases described by the latter, the fever is the principal clinical manifestation. The character, however, of hysterical fever is extremely irregular. It may be continued, remittent, or intermittent. In some cases the temperature is known to have risen to over 106°F.; the duration varies from a few weeks to several months, or even years. In all cases defervescence is rapid. The patient is cured suddenly. The tongue may be clean and the pulse, skin, and subjective sensations of heat may bear no relation to the rise of temperature. The most remarkable fact is the absence of wasting. The protean manifestations of hysteria, sooner or later, are apt to make their appearance, particularly in the form of convulsive seizures. Boulay describes forms of hysterical fever which simulate *typhoid fever*, pneumonia, asthma, pulmonary tuberculosis, meningitis, peritonitis, and intermittent fever. Fever simulating typhoid fever may set in, after, perhaps, some mental shock with elevation of temperature, diarrhea, a dry tongue, and dullness of intellect. The diagnosis is difficult, and can only be made on the occurrence or development of the hysterical phenomena. A sudden onset after some emotional cause will put one on one’s guard. (These last-mentioned facts are freely quoted from Rohé on “Mental Diseases,” who cites them from Boulay, in Sajous’ *Annual of the Universal Medical Sciences*, 1892.)

I think, therefore, that the most skeptical of us will admit that the nerve centers play an important part in the production of fevers; indeed, in point of fact, it occurs to us that in the application of Liebermeister's views, too great scope and importance have been given to temperature considerations and the present decline, if not failure, of the antipyretic treatment which is daily becoming more pronounced, further corroborates my statement. For many years I was an ardent disciple of Wunderlich, and closely followed his prognostic and therapeutic teachings, based upon his studious observations of temperature abnormalities, and whilst I still cling to some of my former convictions in this connection, and have a profound respect for and consequent timidity in the presence of conditions of extreme temperature elevation in my patients, still I believe that the whole subject has been greatly exaggerated, and that the high degree of bodily heat is not the "bug bear" it formerly was to physicians, nor indeed is it always the most important factor in the dangers, or even in the genetic developments of fever, the stability and disturbance of the nerve centers being a matter of much greater vital import. I would not, for one moment, have any of my hearers conclude that I overlook or undervalue the extremely dangerous results of parenchymatous degeneration of the vital organs developed by high temperature during the course of fevers. Of this fact there can be no doubt, namely, that a persistent elevation of the temperature and consequent parenchymatous degeneration result in serious lesions and deteriorations of the vital organs and of the muscular and nervous systems, due to granular and fatty changes. Thus the consistency of organs and even their color are materially altered, and the degree of the tissue degeneration keeps pace, *pari passu*, with the range of temperature. As an illustration of what occurs in this respect in typhoid fever, let us for a moment contemplate, simply by way of illustration, the changes that may occur, for instance, in the cardiac muscles. "The granules appear in large numbers, arranged in parallel rows, filling the fibers and ultimately causing a disappearance of the striæ. The result of this change is very injurious. The tissue of the heart is soft, flabby, and easily torn, and the organ in advanced cases can not maintain

its shape when laid on a table, but flattens out like so much mush. In the muscles the degeneration takes the two forms of granular and waxy." In the brain of typhoid fever patients where parenchymatous degeneration has occurred, the microscopical observations of tissue changes are not as characteristic and developed as the gross alterations observed by the unassisted eye. The principal anatomical changes under such circumstances, consisting in edema and anemia of the cerebral substance, with transudation of serum in the subarachnoid, perivascular lymph-spaces, and also into the ventricles. It may also occur in very exceptional cases that evidences of a recent meningitis are encountered. The consistency of the brain is at times altered and accompanied with more or less atrophy and flattening of the convolutions.

Hence it can not be doubted that parenchymatous tissue changes occur as the result of high temperature elevation during fever, and are frequently encountered in typhoid cases, and that whilst for many years the pathological eye has been rivited upon them as matters of supreme and vital import, in the present advanced state of science, they must only be estimated as *secondary* consequences. As we have stated before, we are *more* than convinced that the *fons et origo* of all fevers consists in a disturbance of the *nervous elements* and abnormality of action of the thermic centers. As above described, not only in hysteria do we at times have extreme elevation of temperature, but also in apoplexy, eclamptic conditions, the *status epilepticus*, *puerperal*, and even in uremic convulsions, as observed by Bartels, thus proving that in these neuropathic conditions in which there is total absence of inflammatory action, the temperature frequently is very greatly elevated, the result of perturbation of the nerve elements. As a confirmation of the fact that even *persistent* high temperatures are not always incompatible with life, and do not necessarily result in parenchymatous tissue degeneration, we would cite the case of a lady, the wife of a prominent member of the Missouri Medical Faculty, whom we delivered over twenty years ago, whilst in general practice, and in whom a vaginal thrombus occurred after a forceps delivery, a septicemia followed, accompanied by a persistently elevated temperature of from

105 to 106°F., lasting five or six weeks, and yet the patient eventually recovered without any subsequent sequelæ, or even the development of any nervous complications during or after convalescence.

Before referring to the development of insanity after typhoid fever, let us for a moment consider the production of mental disease in other analogous conditions from sources as distinctly infectious as the last-named disease. It is a well-attested fact that numerous cases of insanity have followed recent epidemic visitations of *la grippe*. "Febrile delirium, during an infectious disease, is in fact, an acute attack of insanity. There are the febrile mental derangements proper to the fever (psychoses febriles), and there is the delirium of convalescence (psychoses astheniques). The latter embraces many distinct kinds. Towards the end of acute infection diseases there is the 'delirium of inanition,' which may go on to the delirium of collapse, so well described by Weber. But although asthenic delirium is the most common kind during convalescence (Christian), other kinds are met with, sensorial illusions being often present. There is probably, in such cases, a cerebral intoxication due to microbic products of the virus which sets up the disease. One great distinction between the psychoses of convalescence and the delirium of fever, lies in the evident influence of heredity and the personal antecedents of the patient, upon the character of the delirium in the former case (Kræpelin, Savage), in contrast to its uniform course in the latter; in fact, heredity appears to play the chief part, and the acute disease is often only the accidental cause of the mental alienation." Brush, Sajous' *Annual of the Universal Medical Sciences*, 1891.)

Delirium is sometimes one of the earliest symptoms in "la grippe." Melancholia and hypochondriasis and also the asthenic psychoses, including dementia, have been known to follow in the wake of "la grippe." Somnambulism, typical mania and general paralysis, with its characteristic symptoms, have followed influenza; medico-legal contests have originated in consequence of crime committed after the convalescence from influenza and other acute diseases, thereby showing the great perturbation of the cortical nervous centers from disease.

The nosology of insanity has recently had added thereto an affection called "*la nonna*," which is a grave nervous form of mental *sequelæ* of influenza." (Brush). A case of the same mental disease, namely, *la nonna*, is cited by the last-named authority as having followed typhoid fever.

Vienna physicians consider *la nonna* as an asthenic psychosis, ending in lethargy and coma, occurring for the most part in persons overworked and exhausted in every way, who have not been able to attend to themselves during the influenza. (Brush).

From these observations we can readily understand when we study the development of insanity, occurring during the period of convalescence from acute disease, especially those of a febrile or infectious character, and more particularly when a predisposition through heredity exists, how readily may insanity occur as one of the *sequelæ* of typhoid fever. Pathological conditions of imperfect blood renewal here play a prominent rôle in addition to the various other causes that I have already enumerated.

Fevers have more pernicious effects on the constitution of the blood, and develop and intensify anemia by tissue oxidation and corresponding retrograde metamorphosis, to say nothing of effete or excrementitious material in the circulation, thereby greatly impairing nervous nutrition and consequent functional activity. These pernicious results and qualitative perversions of fevers, inflammations, and other acute maladies upon the blood, are familiarly evinced during convalescence from protracted disease, and by the "delirium of inanition."

Quantitative and qualitative blood-changes will more or less materially influence the production of cerebral anemia, which is probably the principle anatomical substratum of typhoid fever, especially when, from chylipoietic disease, or systemic conditions, improper or deficient hematosiis results. The absence of proper arterial blood—its presence being a *sine quo non* for the due performance of the cerebral functions—will be readily appreciated. Moreover, the oxygen of the vital current, being an essential agent, must not be unduly diminished, for the proper processes of nerve nutrition could not then be accomplished, and the normal performance

of the functional activities would be prevented. The red corpuscles being "carriers of oxygen," a deficiency on their part, so far as the brain is concerned, would be equivalent to inadequacy of the blood supply itself.

In addition to the etiological factors of mental disease following typhoid fever already considered, we must not neglect a reference to those of microbic origin, as it is now a well-established fact that the bacillus of Eberth is constantly present in the lesions. The observations of Eberth, Koch and Gaffky incontestibly prove the presence of micro-organisms in typhoid fever. Therefore, bacteriology is to be credited with some potential influences, in addition to the numerous ones I have already cited, as primary causes of the disturbances of the nervous system occurring in typhoid fever, which may result in the genetic development or subsequent insanity. Adenot claims that all forms of true meningitis are probably of microbic origin. The relation of this fact to typhoid fever is as follows: "Meningitis is primary and secondary. The *last* named form of the disease developed in the course of *infectious* diseases, is often the result of mixed infection, and due to a different microbe from that which excited the primary infection. Certain microbes can locate primarily in the meninges, which do not, however, choose that location *habitually*. We have reason to believe this of the typhoid bacillus. We may thus admit a cerebral typhoid without typhoid fever. The microbes find their way to the meninges either through a direct route, as in otitis, or by way of the circulation. The last named course is far the most frequent." (Landon Carter Gray, Sajous' *Annual of the Universal Medical Sciences*, 1891).

It should never be forgotten in observing the cases in which the effect of the typhoid poison is manifested on the *nervous* system early and with the greatest intensity that its very *onset* may be with mania, and that, moreover, special care will exceptionally be requisite to differentiate it from basilar meningitis with which it sometimes has symptoms in common, but more particularly should we, in our diagnosis, discriminate between genuine typhoid fever and "acute delirium mania," otherwise known as "typho-mania, or delirium grave."

Acute delirium mania, or delirium grave, is that form of

insanity in which maniacal symptoms exist with more or less elevation of temperature; in other words, when superadded to the ordinary symptoms of mania there is more or less heat, which can be readily detected by the thermometer. The acute delirious mania might more properly be called "typhomania," on account of the invariable existence of adynamic symptoms, but too often proving fatal. The symptoms are typhoid in character: The pulse is rapid and frequent, the tongue is dry, and asthenia soon becomes more or less pronounced. It is well to understand this condition, as it requires immediate and appropriate attention. It is a matter of life and death, and unless earnest measures are resorted to, the patient rapidly grows worse and sinks, which, indeed, is usually the case in spite of all our best efforts to the contrary.

In acute delirious mania, or typhomania, there is an active delirium accompanying the symptoms of mania, not unlike what we might meet with in acute febrile diseases, especially in typhoid fever. The delirium which is so prominent a symptom in certain low forms of fever should not be mistaken for that of the disease under consideration, as the manifestations of the latter are much more active, and the absence of enteric complications constitutes a marked feature. Although the thermometer may run up to 105°F. , the pulse is frequent and rapid, and sordes accumulate upon the teeth; if on our guard, we can nearly always make a correct diagnosis.

The onset of the disease is usually violent and sudden, and it runs its course in a short time, sometimes lasting three or four days, at other times a week or longer. The aspect of the patient, history of the case, and peculiarities of the delirium will enable us to distinguish this affection from delirium tremens, meningitis or ordinary cases of mania. The presence of tremor, peculiar visual hallucinations, and "good-natured loquacious delirium" in delirium tremens, the different character of the symptoms in meningitis, and the absence of fever and asthenic symptoms in ordinary mania, will enable us to avoid errors of diagnosis.

Spitzka says: "The majority of the patients affected with typhomania die in the delirious period, after an illness of a few weeks; in those who do not die at this period the ex-

citement continues unabated for four or five weeks, the subsequent symptoms of stupor increase, and the history closes with a fatal coma." In a case I once saw in consultation, at the request of my friends, the Doctors Boislinière, the patient died at the expiration of three weeks. "*Complete recovery never occurs*; in rare instances the patients emerge from this severe disorder with a slight mental defect; in others paretic and terminal dementia supervene." The anatomical appearances of typhomania consists in an intense hyperemia of the brain and meninges.

"*Organic* nervous disease is of much less frequent occurrence after typhoid fever than in functional disease. It much more often involves the cord or peripheral nerves than the brain. Organic brain affections are more rare. They include acute meningitis, paralysis of the cranial nerves, multiple sclerosis, and optic neuritis. The functional affections dependent on typhoid fever are, many of them, of common occurrence, and seem to be due to the influence of a diffusible poison (toxalbumin) which affects chiefly the brain. Thus there are observed bilateral deafness (very common); loss of speech, not true aphasia (common); mental failure, as shown by loss of memory, change in character, or imbecility; chronic mania; tremor; transient paraplegic weakness (very common) and due, perhaps, to change in the muscles; neuralgic pains and various manifestations of hysteria in those predisposed to the disease.

"The relation of these various functional and organic conditions to the preceding typhoid fever is commonly clear enough. There is nothing sufficiently distinctive about any of the conditions that have been enumerated to enable one to refer them to typhoid fever in the absence of a clear history of this disease." (Herter, "Diagnosis of Diseases of the Nervous System").

Post-febrile insanity is more frequent after typhoid fever than, perhaps, after any other disease.

Wood regards it as confusional insanity, the result of impaired nutrition and exhaustion of the nervous centers.

Osler reports five cases of insanity after typhoid fever, in four of which recovery occurred.

Dickson reports a case of complete amnesia after typhoid

fever, which persisted for many months and suddenly recovered.

Another authority, whose name I can not recall, cites the case of entire disability of an eminent musician to recall a note, or ever again to perform on a musical instrument after typhoid fever. This faculty was never restored.

Nasse, who has paid much attention to mental affections originating in fever, classifies them according as they are the immediate result of the fever itself, or constitute a prolongation of the delirium when the fever has subsided, or arises during convalescence. The last class is more especially intended by the term, "Post-Febrile Insanity," * * *

Out of two thousand insane patients admitted during six years at Siegburg, forty-three cases, the certain result of typhoid fever, were admitted. Many of these cases were examples of melancholia and mania due to anemia, and rapidly recovered. (Bucknill and Tuke).

The same authors give descriptions of cases of rheumatic, choreic, gouty, and tubercular insanity.

"There are cases on record, again, in which mental derangement has appeared as the intermittent symptoms of ague, instead of the usual symptoms, the patient has had intermittent insanity, in regular tertian or quartan attacks, and has been cured by the treatment for intermittent fever.

"Griesinger directs special attention to cases in which mental disorder has occurred in the course of acute rheumatism, the swelling of the joints meanwhile subsiding; and Arnold has known cases of people subject to frequent attacks of gout, who have had none while suffering from an attack of insanity.

"The viruses of acute fevers, as typhus and typhoid, may notably act in the most positive manner on the supreme nervous cells, give rise to an active delirium or more or less enduring insanity; and where they do not act directly at the height of the fever, they sometimes predispose to an outbreak of insanity during the decline of the acute disease. Not only may a morbid poison thus attack the nervous system, or a part of it, but it should be borne in mind that a particular virus will most likely produce its special effects, not otherwise than as tea and

coffee commonly produce wakefulness, while opium produces sleep." (Maudsley).

Morel, in speaking of the results of paludial poisoning in producing mental defects, says: "That in miry streets and in the localities in large cities where a great number of persons aggregated, the human form degenerates and becomes brutal, and the morals of the people are influenced by this degeneration." Then how readily can we understand the potential influence of typhoid fever in producing insanity.

Griesinger again states that, "*acute febrile diseases* of different kinds occasionally give rise to an outbreak of insanity; the disorders which they occasion within the organism seem to be the only causes of the insanity. Typhus fever, intermittent fever, cholera, the acute exanthemata, pneumonia, and acute rheumatism, are the diseases in which it occurs most frequently."

Esquirol, out of the hundred and thirty-five cases of dementia in which he gives the exciting causes, cites three cases of ataxic fever.

Spitzka claims "that fevers exert an important influence in the production of insanity. The term, post febrile insanity, is given to disorders which complicate the crisis, or what would ordinarily be the convalescent period, of certain acute febrile processes, such as scarlatina, small-pox, typhus, typhoid, pneumonia and erysipelas. The post-febrile psychoses are presumably associated with two different pathological states, one of asthenia and anemia of the nerve centers, the other automatically marked by the filling of the periganglionic and sub-adventitial spaces with formed elements of the blood. * * * Most of the patients suffering from post-febrile insanity recover very rapidly, the psychoses terminating with a critical sleep, or by gradual defervescence after a course of, at most, a few weeks. In some cases, however, particularly after rheumatic fever, scarlatina, typhus and typhoid, a more chronic course is observed."

Pinel, Baillarger, Aubanel, Thore, Falret, Sauret and Hanfield Jones all report cases of "*Post-Febrile Insanity*."

The term "Post-Febrile Insanity" originated with Dr. Skæ. Clouston observes that "the insanity which sometimes

followed fevers, was known from the earliest times, and was evidently much more common two hundred years ago than now, but it was then ascribed not to the exhaustive effects of the fever, but to its not having been treated with 'sufficient dilution,' and purged to carry off the entire materies morbi, thus leaving a dangerous element in the system, that was liable to fly to the head and cause insanity. Arnold thought that insanity was much less common in his time than in Sydenham's, after fevers and ague, because they purged more than the old physicians, and used Peruvian bark more freely. Post-febrile insanity is not special, confined to one kind of fever."

In conclusion, in estimating the etiological factors eminently productive of insanity after typhoid fever, if the deductions of my paper be correct, we first find a prominent rôle played by heredity in producing "unstable constitution of nervous equilibrium;" secondly, disturbances of the nerve centers themselves, of which fever is but too often merely an expression or clinical manifestation; thirdly, anemia, the direct result or anatomical substratum of the febrile processes, or excessive and prolonged temperature elevation causing "irritable weakness;" fourthly, toxic perturbation of nervous nutrition, superinduced by the retention of effete or excrementitious materials, resulting in qualitative blood changes with corresponding metabolic and somatic tissue or textural perversions; and, lastly, microbic invasions of special nerve centers preventing their normal physiological functional activities—all of which consequences lead to the development of a cachectic anemic condition of the cortical nerve centers.

[2808 Olive Street]

The Heidelberg Medical Faculty, induced by Government influence, has voted to admit women students. This is noteworthy, since Heidelberg is extremely conservative. It is believed that the movement is due to the influence of the Grand Duchess of Baden, who is such an active worker for the social welfare of her subjects and her sex. Only last semester, the feeling in Heidelberg was strong against admitting women.

The So=Called Fetal Theory of the Cause of Eclampsia.

By P. C. T. VON DER HOEVEN, M.D.,

AMSTERDAM, HOLLAND.

IN May, 1896, I tried to form an hypothesis regarding the cause of eclampsia.¹ At that time my hypothesis was rejected almost universally and I dropped the subject. Now, however, as I observe similar theories advanced in the United States, France, Italy, and England (but not in Germany), I am encouraged to again advance the same hypothesis, wherein the presence of the living fetus in the uterus is supposed to be responsible for the appearance of eclampsia. It is known that one finds, in case of eclampsia, alterations in the organs of the mother and of the child which can not be explained otherwise than through the presence of a greater quantity of toxins in the blood; then there is a non-pregnant condition, a toxemia, which has been proved so repeatedly that it can not be doubted.²

Leaving alone the question as to the nature of the toxins, I wish to trace only whence they come. Their origin may be double:

1. In pregnancy the secretory organs are changed anatomically and functionally and are not able to perform their *normal amount of labor*.³
2. The secretory organs begin to rest unchanged but the demands upon their functions is increased; during pregnancy *more toxins must be removed*.

Rivière, who is a champion of the first supposition, keeps his conviction on account of the blood of pregnant women being hydremic,⁴ the heart being hypertrophic, the nervous system being far more irritable, the liver being changed anatomically, the lungs being hindered in their functions through the high state of the diaphragm and through the hydremia of the blood (Bouffe de St. Blaise), the functions of the digestive tract being disturbed, and finally, the kidneys being deranged and

therefore not able to perform the increased labor which is charged on them through the insufficient working of the other named organs.

That the blood does not become hydremic through pregnancy is proved by R. Schroeder,⁵ Fehling, Reine, and by my own observations.⁶

Schmorl⁷ and Löhlein⁸ have shown that pregnancy does not influence the size of the heart, while the researches of Riviére show that changes in the liver do not appear in every pregnancy. In the majority of pregnancies we observe very little cyanosis, or dyspnea, which are indications of a hindrance in the functions of the lungs. Only the functions of the bowels and those of the nervous system often are disturbed. However, we see these disturbances frequently without pregnancy and then they never cause eclampsia. Therefore, it is not very probable that the kidneys ought to eliminate more toxins as a consequence of insufficient work.

For the time being I have tried to prove that any renal disease, nephritis gravidarum, ought not to be considered as the cause but rather as the consequence of the toxins (and then the nephritis gravidarum, too, may increase the toxemia).

The only acceptable cause for nephritis gravidarum as well as for the changes in all the other organs which are found with eclampsia and sometimes before the convulsions have broken out, is the toxemia.

Since I published this opinion I found a support in Beyers, who said, at the Congress at Geneva in September, 1896, "the toxins are not sufficiently eliminated when there are changes in the renal organs and the liver in the form of a parenchymatous degeneration produced by the poison in its circulation through them."

And, moreover, if eclampsia really arose because the secreting organs can not perform their ordinary work, what then is the reason that eclampsia does not arise much more often, and not especially with tender praviðæ? And why so, that after the death or after the birth of the child, the eclamptic convulsions often are stopped suddenly, while the insufficient maternal organs are still unchanged?

When thus the first supposition falls, there rests only the

second: *the supply of toxins is augmented*; there are *formed more* toxins in pregnancy. Where are they formed?

In that part of the organs does there now occur a metabolism which did not exist formerly, thus in the uterus or rather in the fetus? One has opposed here that this metabolism is too small to explain the symptoms. But where the different secretory organs of the fetus are functioning (to remove the products of metabolism), where the fetus is moving, and where cells and organs are formed, it is plain that there occurs a great metabolic change. And all this becomes still clearer when one pays attention to the large veins which the mother sends to the uterus and when one considers how great are the needs in the formation of cells and organs. And to conclude, it is proved through the temperature *in utero* which is higher than that of the mother (a consequence of the metabolism), sometimes even so high that a difference of a degree has been observed; a large difference when one considers that the maternal organism tries constantly to regulate the temperature of the uterus and her own temperature.

It, too, is remarkable that most of the cases of eclampsia occur in those months of pregnancy in which the production of fetal organs is the greatest.

Against this it has been said that it is not probable that the forming of a fetus of about 3 kilogrammes weight should give rise to so many toxins, while no one who forms 3 kilogrammes fat shows intoxication symptoms. The answer to this opposition may be short, because it is plain, that a process is much more radical and otherwise when 3 kilogrammes fetal organs are *formed* than when 3 kilogrammes fat is *deposited* anywhere.

Against the fetal theory, one mentions⁹ further those cases of eclampsia in the first, second and third month of pregnancy, and indeed these could be a difficult though not insurmountable obstacle, as they are also for most all of the other theories regarding the cause of eclampsia.

I therefore studied the literature and it was not possible for me to find among 576 cases more than five cases in which eclampsia has appeared before the fifth month,¹⁰ and three in which it appeared during the fifth month. As to the others,

nineteen appeared in the sixth month, all the rest after the sixth month.

Thus I found not more than five cases which we ought to consider. A very small number indeed, and as the diagnosis of eclampsia is often incorrectly made it is not improbable that these cases (four date from more former years) have anything to do with eclampsia.

We say, therefore, in the child is a marked metabolism. The products of the metabolism are always toxic to the organism. These products must be removed or the child will become poisoned by the products of its own metabolism. And this removal can not be done otherwise than through the blood of the mother.

Two ways are open to the fetus: First, with its urine into the liquor amnii and from there to the mother, and second, directly along the placenta into the maternal blood. Probably these two ways are used.

The transition of solved substances of the fetus to the mother has been proved in late years by experiments on animals, especially through Lannois,¹¹ Charpentier and Butte, Hochwelker,¹² Freyer, Gusserow (1877), Bar (1881), Charrin,¹³ and Törngren.¹⁴ These experiments were done on persons by Baron and Castaigne.¹⁵ Törngren pretends that the interchange through the placenta occurs slower than through the liquor amnii. Prof. Lannois and his pupils chiefly take into consideration the way along the placenta. But I think that the way through the liquor amnii is surely not too slight.

The kidneys of the fetus work and remove uremic and other products of metabolism. Why should they work but in one regard otherwise than later (I mean the removal of toxins)? We have a production of toxins as well of the mother as of the child. To the mother after all falls the task to remove all these toxins. In the same unity of time the maternal secretory organs and especially the kidneys must let pass more toxins than without pregnancy. The maternal blood is therefore more toxic because the supply of toxins has increased; the urine of pregnant women is more toxic because more toxins are removed. This augmentation of toxins causes in one person earlier than in another those changes in the organs, which

changes disturb the concerned organs in their labor (especially the kidneys when the epithelium is attacked). It is therefore that in case of high degree of intoxication, sometimes during eclamptic convulsions, the toxicity of the urine may be diminished.¹⁶

If none of the other organs take on the functions, then there will remain more toxins in the organism of the mother, and there will arise a degree of intoxication which is higher than ought to be considered as normal during pregnancy. This normal condition will vary for every gravida and at every period of pregnancy.

Nephritis gravidarum and eclamptic convulsions are only two degrees of a toxic condition.

In every pregnancy there is physiologically an augmentation of the toxins of the blood as a consequence of the augmented production of toxins. This augmentation of the toxic state of the blood may produce changes in the organs, and these, in their turn, are the cause of a pathological increase of the toxemia.

It is, of course, possible that a healthy child is not likely to give a too strong supply of toxins for the maternal organs, but that a fetus which is ill, *in utero*, will produce such a pathological condition. That further, the power of resistance of the maternal organs is of great importance in regard to the degree of the toxemia, is very plain, so that one ought not to reject, as does Bouffe de St. Blaise, the fetal theory on account of the consideration that it is not the rule that eclampsia appears sooner in case of a large than of a small child. This opinion has found warm defenders, in the last year, at least as to the fundamental idea.

Chambrelent, Schmorl, Cassaet, Bar, Guyese and many others,¹⁷ have found the same changes in the organs of the child and mother, and, as I said before, Chambrelant could prove that the blood of the fetus contains more toxins than the blood of the mother. The origin of the augmented toxemia must, therefore, lie in the fetus.

The fetal theory of eclampsia is defended by Beyers,¹⁸ Inverardi,¹⁹ Chrobak, Kier, Kollmaner, Lannois,²⁰ Hochmelker,²¹ Nikiforow, Morisani, Pasquali,²² Potter²³ and others. In the

latest text-book on obstetrics by Hirst, I read: "The kidneys in pregnancy may become insufficient for the work of disposing of excrementitious matters from both maternal and fetal bodies." Bouffe de St. Blaise, who is not at all a defender of the fetal theory, writes, notwithstanding: "*Je n'ai nullement l'intention de refuser à la toxémie d'origine fœtale une importance considérable dans les auto-intoxications de la femme enceinte; mais je me refuse, à lui donner une importance prépondérante.*"

One of the greatest factors upon which the fetal theory rests is the fact that eclampsia is seen so often in case of twin pregnancy, which is comprehensible now without more proof, and that eclamptic symptoms or albuminuria repeatedly improve after the death of the child, although the fetus is not born.

This fact is proved, first, through Winckel, and, later through Beyers,²⁴ Morisani, Pasquali,²⁵ Vinay, Hipolyte, Fehling, Thelisse,²⁶ Freeland Barbour,²⁷ Underhill, Maclaren, Spiegelberg and Lannois.²⁸ All of them described cases where albuminuria or symptoms of threatened eclampsia vanished or improved greatly after the death of the fetus. In my opinion there is not left the slightest doubt. But many others do not see the greatest difficulty in the above-mentioned opposition, but in the appearance of eclampsia after the birth of the child. But, really, this ought not to be considered a difficulty. With the child, the principle origin of toxins has vanished from the maternal body, but the changes in the maternal organs, caused through the toxins, remain. Previous to this they cause an insufficient elimination of toxins, and now, after parturition, the kidneys remove less toxins than are produced through the maternal organism than the toxemia will augment until the incitement of the nervous system becomes so strong that the convulsions explode.

Although during parturition the toxemia is increased on account of the muscular action and the small labor of the kidneys, the extent of the intoxication is as yet not sufficient to cause convulsions. But sometimes, two or three days later, the degree of intoxication has arisen so high that convulsion supervene. If, however, the nervous system presents a strong incitement, convulsions may explode, as in case of lesser

grades of intoxication. Hochmelker, a pupil of Lannois, expresses himself on this subject almost in the same manner.

After all this, one expects that the child, who is born alive, from an eclamptic mother, will show intoxication symptoms, and will thus reason. The albuminuria of the fetus is already proved through Dohrn,²⁹ and the convulsions of the child are described by Cazeaux and Schmidt, and in the last year repeatedly, among others, Schmidt,³⁰ Dohrn,³¹ Woyer³² and Kreutzmann.³³

But it is plain that the convulsions of the child are not always observed, and justly so, because in the cases where the mother needs so much care, one does not mind the child very much, and the coma after a convulsion will be accepted with joy as a quiet sleep of the infant; and, moreover, the incitement of the nervous system of the child is so extremely small.

Through the above-mentioned opinions all of the peculiarities of eclampsia occurring in primiparæ, especially in women with small pelves, namely, the favorable effect of injections of physiological salt solution, milk diet, bleeding, etc., are easily and logically explained.

BIBLIOGRAPHY.

1. Von der Hoeven—De Etiologie der Eclampsia, 1896.
2. Blanc, *Archiv. de Torol.*, 1889-90; Laulanié, Tarnier, and Chambrelent, *Congress de Bruxelles*, 1892; Demont, Gorie, and Van der Velde, *Tägschrift und Verloskunde*, 1897.
3. Rivière, *Pathog. et trait de l' auto-intoxication*, Paris, 1888; Potter, *American Journal of Obstetrics*, 1897, and many others. See also Bouffe de St. Blaise, *Les auto-intoxication de la grossesse*, 1899.
4. Bouffe de St. Blaise, *Loc. cit.*
5. R. Schroeder, *Archiv. f. Gynäkol.*, 1890.
6. P. C. T. Von der Hoeven, *Loc. cit.*
7. Schmorl, *Pathol. Anat. Untersuch. Puerp. Eclampsie*, 1893.
8. Löhlein, *Zeitschrift f. Geb. u. Gyn.*, 1897.
9. Prof. Nyhoff, *Ned. Tydschrift v. Verloskunde*, 1896.
10. Charpentier, (*Traité*), Auvard, and Daniel, *Archive de Gyn. et de Tocol.*, 1897.
11. Lannois and Brien, *Lyon Médical*, 1890.
12. Hochwelker, *Thèse*, 1898.

13. Acad. des Sciences, 1898.
14. Törngren, Archives de Tocol., 1888.
15. Baron and Castaigne, Archiv. de Med. Exp., 1898.
16. Ludwig and Savor, Monatschr. f. Geb. u. Gyn., 1895. See also Bar and Renon, Soc. Biol., 1894, Bouchard.
17. Vicarelli, Riv. d'Obst. Gyn. et Ped., 1896.
18. Beyers, Congrès de Genève, September, 1896.
19. Inverardi, Annali di Obst. et Gin., 1896.
20. Hochwelker, Loc. cit.
21. Nikiforow, Loc. cit.
22. Pasquali, Congrès de Genève, 1896.
23. Potter, American Journal of Obstetrics, 1897.
24. Beyers, Loc. cit., and The Lancet, 1897.
25. Pasquali, Loc. cit.
26. Thelisse, Jour. med. de Lille, 1886.
27. Freeland Barbour, Edinb. Med. Jour., 1885.
28. Lannois, Loc. cit.
29. Dohrn, Monatschr. f. Geburtshilfe, 1867.
30. Schmid, Centralbl. f. Gyn., 1897.
31. Dohrn, Loc. cit., 1895.
32. Woyer, Loc. cit., 1895.
33. Kreutzmann, Albuminuria During Pregnancy Without Convulsions of the Mother, but With Eclampsia of New-Born Infant, New York, 1899.

An Increase in the Army Medical Staff.—A bill which has been prepared by Surgeon-General Sternberg will be presented to Congress during its present session. The bill provides for the addition to the corps of four assistant surgeon generals, with the rank of colonel; ten deputy surgeon-generals, with the rank of lieutenant-colonel; thirty surgeons, with the rank of major, and eighty assistant surgeons, with the rank of first lieutenant, who shall have the rank of captain at the expiration of five years of service. Acting assistant surgeons to the number authorized are to be appointed, subject to the usual examination, for a probationary period of six months, during which they will attend the Army Medical School in Washington, at the end of which time, if their standing is good, they are to be commissioned to fill existing vacancies. This probationary service is waived in the case of candidates who have rendered satisfactory service as acting assistant surgeons or as commissioned medical officers in the volunteer army for a period of six months or more. The vacancies occurring in the grades of major, lieutenant-colonel, and colonel will be filled by seniority promotion.—*N. Y. Medical Record.*

Stricture of the Ureter a Possible Result of Laceration of the Cervix Uteri, and Ureterovaginal Fistula a Result of Trachelorrhaphy.*

By E. C. DUDLEY, M.D.,

CHICAGO, ILL.

Read by invitation before the Boston Obstetrical Society, December 19, 1899.

FOR the purpose of illustration I offer the following history of a case. All details not belonging to the subject under discussion are purposely omitted. The patient was 37 years of age and married. The oldest child was 21 and the youngest $1\frac{1}{2}$ years of age. Date of first consultation was March 29, 1899.

Subjective Symptoms.—In addition to the usual symptoms of menorrhagia, mucopurulent uterine secretion, dysmenorrhea, vesical irritation, headache and nervousness, the patient, since the birth of the first child, 21 years before, had suffered from pain referred to the left inguinal region; this pain was of variable intensity, always annoying, often quite severe, and was the chief and significant subjective symptom.

Examination.—Examination of the pelvic organs, in so far as it relates to this discussion, gave the following results: Uterus symmetrically enlarged from endometritis and metritis, the canal measuring three and a half inches in length. Position of uterus normal. Bilateral laceration, great circular enlargement, cystic degeneration, erosion and eversion of the cervix uteri. The cervical laceration on the left side was extreme; it had extended far into the vaginal wall and parametria and had healed by much cicatrization. The perineum was lacerated to the sphincter ani muscle. Uterine appendages normal.

Operative treatment.—April 20, 1899. The cervix uteri and perineum were closed. The operation on the cervix was

*Published also in the *Boston Medical and Surgical Journal*.

that of Emmet, as modified by Schroeder, and involved the resection of considerable tissue from the thickened lips. The denuded surfaces at numerous points were quite hemorrhagic, so that both in the cervix and perineum some difficulty was experienced in the control of hemorrhage.

Nine days after the operation there suddenly appeared dangerous hemorrhage from the vagina, and my interne, unable to find me, called one of my colleagues, who promptly etherized the patient, and by the introduction of sutures under the bleeding points, close to the uterus, arrested the hemorrhage, and, as I think, saved the patient's life. Two days later urine began to pass voluntarily through the vagina. Further observation, however, showed that a part of it also passed normally and voluntarily through the urethra. This led to the suspicion that one of the ureters was probably discharging urine directly into the vagina and the other into the bladder. Examination of the vagina by means of Sim's speculum showed that at the line of union to the left of the cervix where the laceration had been most extensive an occasional spurt of the urine. The attempt, however, to pass a ureteral bougie from this point failed. Dr. Kolischer, who has great skill in electrocystoscopy, kindly saw the patient with me at this time. He distended the bladder with water and by means of a Carper cystoscope readily passed a bougie into the right ureter. The left ureter, however, was occluded, so that the smallest bougie would only pass about five-eighths of an inch inside the ureteral orifice. The diagnosis was now established of a ureterovaginal fistula. It was evident that one of the sutures or ligatures, either at the time of the original operation or at the time of the hemorrhage, had been passed around this ureter and had slowly cut it off or had so transfixed the ureteral wall as to open it. One week after the hemorrhage the sutures were removed. During the following four weeks the nurse reported that the discharge of urine through the vagina was not constant. Urine apparently accumulated in the ureter and pelvis of the kidneys and was discharged at intervals. Upon speculum examination about three weeks after the hemorrhage, the injured part of the vagina being exposed for thirty minutes, no urine was seen to escape. The patient, however reported

that urine had sometimes been retained for three or four hours and had then escaped in considerable quantities through the vagina.

On June 2, thirty-five days after the hemorrhage, with the purpose of performing some operation to re-establish a free communication between the injured ureter and the bladder, I again etherized the patient. For more than three-quarters of an hour with urine tenacula and a fine probe I sought in vain for the point where the ureter opened into the vagina. No urine came through to mark this point, and even after some rather extensive dissection with the scissors I was unable to locate the fistula, nor was I able to make out the ureter by palpation. Finally, however, a little spurt of urine appeared just to the left of the cervix uteri, but I was unable at this point to pass even a very fine probe. Each attempt only resulted in the making of a false passage—a thing difficult to avoid under such conditions. I then made a colpocystotomy, cutting with the scissors through the vesicovaginal wall in the median line and in the long axis of the vagina just in front of the cervix. The vesicovaginal fistula thus made was an inch long. The upper extremity of it terminated close to the anterior wall of the cervix uteri. With a pair of straight scissors I then extended the incision upward and to the left as nearly as could be estimated to the point whence the urine had escaped. The object was if possible to convert the ureterovaginal fistula into a uretero-vesicovaginal fistula; so that the ureter should open, not into the vagina, but into the margin of a vesicovaginal fistula. After another long search I again failed to find the fistulous opening into the ureter, until it was located by another spurt of urine, but the opening was too small to admit even a very fine probe and therefore could not be entered. I then still further enlarged the vesicovaginal fistula in a direction to the left of the uterus, and by good fortune opened into a very much dilated ureter, from which immediately there gushed two or three ounces of pent-up urine. The dilatation explains the fact that I had been unable to locate this ureter by palpation. A bougie passed without obstruction to the kidney thereby proved the absence of and constriction above.

The situation being now much simplified the following

procedures were adopted: The bladder mucosa was stitched to the vaginal mucosa all around the artificial vesicovaginal fistula. In this way the exposed surfaces were covered and hemorrhage controlled. A hemostatic forceps, with handles about four inches long and with slender jaws about an inch long, was passed into the vagina and through the fistula. The forceps jaws were then passed, one into the ureter and the other into the bladder, so that the forceps, when locked included in their bite, ureteral wall, bladder wall and connective tissue between. In this way the lower extremity of the cut-off ureter was clamped into close relations with the bladder.



The expectation was that the structures within the bite of the forceps would be destroyed by pressure necrosis, and that a wide free ureterovesical opening would be established at a point somewhat distant from the artificial opening into the bladder, and that in this way the case would become one of uncomplicated vesicovaginal fistula. The forceps came off in about three days, and twelve days later the vesicovaginal fistula was closed by suture in the ordinary way. At the time of this operation the new ureteral orifice was found to be perfectly open and very patulous. The subsequent history was uncomplicated,

union was complete and in a short time the patient was discharged cured. In a letter written about six months after the final operation the patient reported entire freedom from the pain in the left inguinal region from which she had suffered, and which had made her a semi-invalid for twenty years. I regret that the ureter was not explored before the operation, and that it has not been practicable to obtain measurements of it since.

My experience in the surgical treatment of ureterovaginal fistula is limited to only two other cases, one traumatic and one congenital. In these two cases I operated at St. Luke's Hospital, Chicago, seven or eight years ago. The operative treatment in each was like that just described, except the ureteral and vesical walls were divided by scissors instead of being clamped by pressure forceps. In these cases, however, the ureteral openings were much nearer to the trigone, and the lower extremity of the injured ureter, therefore, was quite close to the bladder mucosa. In the case just reported the distance and amount of tissue between the bladder and ureter was so great that it could hardly have been divided with the scissors without danger of uncontrollable hemorrhage or of the exposure of broad surfaces to reunite, or to cicatrize and contract, or to suppurate. These difficulties were obviated by clamping the ureter into close contact with the bladder so that when the forceps came off the exposed surfaces left by the necrosis would, owing to the compression, be of small extent. The compression forceps used in this way, therefore, may make the operation practicable in those regions where the tissue between the ureter and the bladder is too abundant to be safely divided by scissors. Howard Kelly, in his recent book, describes an operation of switching the ureter into the bladder through an artificial vesicovaginal fistula. I have proposed the operation just described in the hope that it will give the greatest security against subsequent stricture at the new ureteral orifice.

Traumatic ureterovaginal fistula as a result of trachelorrhaphy is rare, but as a result of vaginal hysterorrhaphy and other vaginal sections is not of infrequent occurrence. The operation above described is applicable to the condition, what-

ever the cause, whether traumatic or congenital. The alternative to the operation are well known and need not be described. To open the abdomen, sever the ureter and insert it into the bladder wall is an operation of great difficulty and danger and sometimes of only transient value. The same may be said of dissecting or stripping the bladder from the pelvic wall, finding the ureter and inserting it into the bladder without invading the peritoneal cavity. The utilization of vaginal mucosa in a plastic operation for the purpose of diverting the urine from the vagina to the bladder usually results in failure of union or later in cicatricial contraction and subsequent stricture at the ureteral orifice. Switching the ureter into the intestine or into the opposite ureter are both questionable procedures.

As a corollary to the case just described I now bring before you an observation that, if well founded, may prove to have some practical significance. It is probable that in this case that the laceration having extended into the parametria had torn the structures around the ureter. There may also have been injurious pressure of the presenting part of the child against the ureter. Such lacerated tissues would necessarily heal by cicatrization and contraction, and the cicatrix thus formed would draw the bruised ureter towards the uterus, compressing it and so give rise to obstruction both from stricture and from kinking. This mechanism will account for the facts of the case. The contracting cicatricial tissue extending from the cervix uteri around the ureter would necessarily draw the ureter into closer proximity to the uterus, where a deep suture applied for closure of the cervix or to control bleeding would be apt to injure it and by compression would cause a narrowing of the lumen of that part lying within its grasp. In this case the stricture extended at least half an inch on either side of the ureteral fistula. It was evidently this constricted portion of the ureter that was caught by the needle and cut off or penetrated by the suture.

It would be quite impossible, without further observation, to estimate the proportion of cases in which laceration of the cervix uteri causes stricture or kinking of the ureter. In this connection, however, every gynecologist may revert to a class

of cases not small, in which there is extensive laceration of the cervix uteri on one or both sides, usually on the left, and in which the localized pain on the corresponding side of the pelvis is not readily accounted for by palpable lesions, such as disease of the uterine appendages or of the appendix vermiformis. The continued pain in such cases dates from the puerperium, is always out of proportion to the palpable pelvic lesions and is not relieved in the slightest degree by the repair of the cervix. As I look back over an experience of more than twenty years I recall many such cases; the one just reported apparently belongs to this class.

But why, one may ask, if the ureter is often drawn by cicatricial contraction close to the uterus, is it not more frequently injured by operations on the cervix? The answer is that if the sutures of trachelorrhaphy were not usually introduced close to the uterus or very superficially in the vaginal wall more cases of ureterovaginal fistula would probably be reported. This case was very hemorrhagic and therefore required exceptionally deep sutures to control the bleeding. In view of the facts already set forth I desire to submit two questions, as follows:

1. In all cases of extensive laceration of the cervix uteri, in which the localized pain is not accounted for by palpable lesions, should we not pass a series of graduated ureteral bougies on the side corresponding to the laceration? This would be for the purpose of measuring the caliber of the ureter and of locating a possible stricture. The principles of examination would be similar to those of measuring the caliber of the male urethra in the diagnosis of stricture.

2. In a case of ureteral stricture due to laceration of the cervix uteri, or to any other cause, and situated within the range of a vaginal operation, would not one be warranted in opening the bladder and then proceeding, as in the case reported, to establish a new ureteral orifice? In other words, should not that condition which in this case was the result of an accident be deliberately reproduced in similar cases?

My own answer to these questions would be in the affirmative.

A Preliminary Report on the Etiology of Scarlatina.

By R. B. H. GRADWOHL, M.D.,

ST. LOUIS, MO.,

BACTERIOLOGIST TO THE ST. LOUIS CITY HOSPITAL, ETC.

Read before the Medical Society of City Hospital Alumni, February 18, 1900.

THE inspiration for my efforts to search out the bacterial cause of scarlet fever was the result of a meeting with Dr. Wm. J. Class, of Chicago, who published in June, 1897, the results of his work upon the bacteriology of this disease. Dr. Class stated in this publication that he had isolated a diplococcus from scarlatinal cases, which diplococcus he thought was the specific cause of that disease. The history of this disease is somewhat similar to many other diseases, in that many accidental micro-organisms have been described from time to time as true etiologic agents, which time and renewed efforts on the part of assiduous investigators have proven to be but coincident factors in the diseases in question. Therefore I will not deny the scepticism which I at first entertained in regard to this discovery. I will say that my scepticism has vanished in this regard and firm confidence in the truth of the discovery has taken its place. Prompted by the investigations of Class, I determined to carry out similar work upon the cases of scarlet fever that might come under my observation at the St. Louis City Hospital. I regret that up to this time I have investigated but seven cases of this disease in that institution, for the reason that we have had only that number of cases during the winter up to the present writing.

Ever since the advent of bacteriology into the realm of medicine, it has been commonly taken for granted that scarlatina is essentially a microbic disease, but strange to say, all endeavors of finding the micro-organism at fault have been barren of results of permanent value. It is true that several investigators have launched forth divers bacteria on the sea of medical literature as *bona fide* bacterial causes of this disease,

but each in turn has been deposed from the seat upon which its respective discoverer had placed it. Crajkowski, Klein, and Edington have sought in vain for the micro-organism concerned in the production of this disease. Klein laid special emphasis upon the streptococcus as the microbic agent of scarlatina. Others adhered to the belief, and many still assert that the streptococcus is responsible for the outbreaks of this disease. Still another class contend that the streptococcus causes only the local manifestations of the disease, such as the inflammatory conditions in the throat, ear, etc.

While examining cultures taken from the throats of patients with various forms of angina, Class noticed the frequent occurrence of a diplococcus in these cases, and upon further investigation found that such cultures were obtained from scarlatinal throats. Moved to a spirit of further investigation, he made cultures from the throats, scales, and blood of individuals suffering with scarlatina and easily obtained this diplococcus from these places and at the same time reproduced the disease in mice, guinea-pigs, and swine. Having noticed that Behla, in the *Centralblatt für Bakteriologie*, reproduced a scarlatini-form rash in swine by inoculating them with the blood of scarlet fever patients, he utilized these animals for his initial inoculated experiments and likewise reproduced the same phenomena by injections of this diplococcus.

In the seven cases seen by me I found the diplococcus scarlatinæ of Class in every case and in every stage of the disease, from the first week until the period of convalescence. I did not examine the blood of the first three cases for the diplococcus, but contented myself by finding it in the scales and throat. In the last four cases it was obtained in pure culture from the blood. In the seventh case it was separated from the urine in pure culture. It was not obtained in pure culture from the throats and scales but was obtained subsequently from those sites in pure culture by plating. I might mention an eighth case in which this micro organism was demonstrated in the throat. It was found in a case of scarlet fever angina which occurred in the private practice of a physician in this city.

The morphologic characteristics of this diplococcus are interesting. It changes its form under different growth-condi-

tions so that after being grown for some time it becomes large enough to be mistaken for a diplo-bacillus. It can be made to return to its original size by passing it through the body of some susceptible animal, such as a mouse.

Biologic Characters.—It is an aerobic, facultative anaerobic, micro-organism. It does not possess independent motion nor does it liquify gelatin in which it grows in a scanty manner. It grows well on nearly all of the ordinary culture media, particularly on 1.3 per cent. agar (acid). It grows as a white line in streak-cultures on gelatin. The white color changes with age to a grayish, pearly-white hue. It grows invisibly on potato. It clouds bouillon in the test-tube, but does not produce gas in glucose, saccharose or lactose bouillon in the fermentation tube. Class grew it on a mixture of garden-earth and glycerin agar.

Pathogenesis.—The diplococcus scarlatinæ is pathogenic for mice, guinea-pigs, swine; non-pathogenic for dogs, cats, rats, white rats, and rabbits. My first inoculations into animals were confined to dogs and cats, but I failed signally to reproduce any disease-manifestations in them or to find the micro-organism in their blood or organs after they were killed by other means. These negative experiments convinced me that these animals are not susceptible to scarlet fever. I arrived at the same conclusion with regard to rabbits, rats and white rats, quite a number of which were utilized without any success. I finally began to use domestic mice and easily succeeded in killing them sometimes within eight hours by subcutaneous injection of a small quantity of an agar culture rubbed up in a little sterilized water. The micro-organism was easily recovered from the organs of these mice after death and in each instance proved to be more virulent than it had been before its passage through the animal. The organs of these mice did not show much in a pathologic way from a macroscopic view, but I will give in detail the results of a microscopic examination in a more complete report later on. Another point of interest that I noticed in connection with my work with mice was this: If a healthy mouse be put into a cage in which another mouse which has been inoculated with the diplococcus scarlatinæ has been kept, the healthy mouse will sicken and die and will show

the diplococcus scarlatinæ in its organs post-mortem. This illustrates the contagiousness of the disease which is produced in mice by the diplococcus scarlatinæ. Guinea-pigs inoculated intraperitoneally will die within ten days and will show gross signs of nephritis and will yield the diplococcus scarlatinæ from their blood. I inoculated two young swine with the diplococcus scarlatinæ; the inoculation was made into the vein upon the ear. A rash appeared in the first pig which was inoculated eight days later. This was followed by desquamation and recovery. The animal was killed and a pronounced acute nephritis noted. The diplococcus scarlatinæ was recovered from the blood and from the kidneys. The rash did not appear in the second pig until the tenth day after inoculation. Thus I proved clearly that this micro-organism is pathogenic for these animals.

While my work has been necessarily limited for the reason stated in the beginning, that is, the limited number of cases with which I was thrown in contact, still I think the uniformity of the results obtained in these few cases and the interesting points in the inoculation experiments, together with the more extensive work of Class, will lay some claim at least to the right of calling this micro-organism the specific etiologic factor in scarlet fever. The discovery undoubtedly has more authentic data to support it than has any one of the previously reported micro-organisms of this disease. In the light of the results obtained by Class and in view of the few observations made by myself, I feel no hesitation in applying the name of "diplococcus scarlatinæ" to this micro-organism with the firm belief that that name will cling to it and that its relationship to the disease scarlatina will be borne out in this name but by further and more extensive clinical and bacteriological observations.

New Naval Hospital.—The new United States Naval Hospital at Mare Island, near Vallejo, Cal., has been completed and is ready to be turned over to the Government. Its capacity may be exceeded by some Eastern institutions, but in the arrangement for the care of the sick and disabled sailors, the institution will rank with the best in the country.

EDITORIAL.

THE STATE BOARD OF HEALTH AND MEDICAL PRACTICE BILLS.

In an editorial in a former number of the *COURIER* we called the attention of the profession in this State to the bill creating a State Board of Health and to that regulating practice in Missouri. The text of the bills will be found in another part of this number. The chief points about the Board of Health bill is as follows :

1. The composition of the Board and the manner of its appointment. The Governor is to appoint seven members, the Senate concurring. Four members hold office for four years and three for two years. After the expiration of the term of the latter, all appointments shall be for four years.

2. The creation of subsidiary boards in each county. The State Board shall appoint two physicians in each county, who, together with the County School Commissioner and Presiding Judge of the County Court, shall constitute a County Board of Health. It shall be the duty of the County Board to report to the State Board whenever a contagious disease prevails within the county. It will have the power to enforce quarantine regulations under instructions from the State Board.

3. Impartial composition of the State Board. No method of practice shall be discriminated against in selecting the members. Not more than three of the seven shall have college connections. Not more than four shall belong to the same party.

4. Definition of the duties of the Board in safeguarding general sanitary interests and particularly in the matter of preventing the spread of communicable diseases, by the establishment of quarantine, etc.

It will be noticed that nothing is here said of the functions of the Board in admitting candidates to the right to practice. This is set

forth in a separate bill, namely, "To Regulate the Practice of Medicine," etc.

The matter of chief interest and importance in the latter bill is that which directs the Board of Health to examine applicants both as to their preliminary and their medical education and specifies that "the State Board of Health shall not be permitted to inquire the source of information of any applicant for license to practice medicine and surgery, but shall subject all applicants to the same examination, and require of all the same degree of proficiency."

We believe that the method here laid down is the only true one. According to the present plan, admission to practice depends on one's obtaining a diploma from a recognized medical school. The obtaining of this diploma in its turn depends upon the successful passing of an examination conducted by the school itself, that is, by persons interested directly in the success of the candidate. It is not necessary, in order to point out the defects of the system, to hint that justice may at times be influenced by personal motives in the passing of candidates. It is enough that a test so devised weighs with an unequal balance, for it is notorious that there is a wide divergence between extremes as to the rigidity of examinations in different schools, all equal before the law, and as to what constitutes a passing grade. By judging all applicants simply on their merits, without asking them how, where, or in what length of time they fitted themselves, a distinction will soon be established between those institutions that turn out good material, and those that do not. We can not imagine a better way to stimulate a proper emulation between medical colleges than this, which will put their finished product to an impartial and public test. A similar plan has been for years in successful operation in Maryland.

Of course the addition of such a criterion by the licensing power in nowise militates against the maintaining by the teaching bodies of such requirements as they may establish, including the number of years of attendance at college necessary before the student can become a candidate for a degree. The college will best serve its own interests by demanding maximum qualifications, but the State Board should look at results. We may be sure that as long as the relations between cause and effect hold good, the strictest institutions will fur-

nish the largest proportion of successful candidates for a license.

We believe that the provisions of both these bills are wise, and while not as strict as we personally might wish to have them, are all that we can reasonably hope to obtain at present. Let every physician throughout the State but interest himself in securing their enactment and this result will be assured.

THE EXAMINATION AND LICENSING OF MIDWIVES BY THE STATE BOARD OF HEALTH OF MISSOURI.

In the proposed medical practice bill to be presented to the State Legislature by the Missouri State Medical Association has been incorporated a section providing for an examination of midwives by the State Board of Health for the purpose of determining their knowledge of the obstetric art and their fitness to practice it.

This bill makes it unlawful for any person to practice midwifery in this State before receiving a license to do so. A license will be granted after the applicant has passed a satisfactory examination before the Board and has paid the fee required for that purpose.

The midwife is not an American Institution, but is a foreign importation, brought to us by the lower class of foreign emigrants, particularly those from Germany, Austria, France, Italy, and Russia. It is among this class of our population that she finds employment, and it is a notable fact that as these or their descendents become more and more Americanized the services of the physician are relied upon to a greater extent.

In taking the rôle of both accoucheuse and nurse, the midwife serves a convenient purpose in the homes of the poor, but taking into consideration the quality of service rendered in each capacity, the parturient woman whom she attends will, in most instances, be better cared for by an untrained female attendant of good intelligence under the guidance of an attending physician. The knowledge that midwives possess of the obstetric functions is generally superficial in character, and asepsis, as understood and practiced by physicians, is to them an unknown word. The midwife is often a mischief maker out of, as well

as in, her accorded sphere, and with a boldness, encouraged by the indifference of public in general to her practices, does not hesitate to cause abortions when it is to her pecuniary benefit.

In the opinion of many of the broad-minded members of the medical profession, it would be better for our public welfare were the practice of obstetrics taken entirely out of the hands of midwives and their present calling prohibited. The honest and conscientious midwife deserves respect; she does the best she knows and should be judged according to her light, but her preparation and training compared by the standard of scientific knowledge required at the present time is meager and insufficient, and like the osteopath, faith curist, Christian scientist, *et id genus omne*, could well be dispensed with. If this is not feasible they should be made to conform to strict regulations in the hands of proper authorities, as the present bill contemplates.

This contemplated law is the best that can be passed, short of entire prohibition of practice by midwives; and as such will be a vast improvement over the present unregulated condition. It will put an end to the tendency of midwives to assume the title of doctor, doctress, or physician, as is frequently done at present, particularly by those who, as abortionists, seek thereby to allure into their hands unfortunate and unwise females. This feature of the proposed law will meet the hearty approval of the profession throughout the State and the Legislature will act wisely in its enactment.

FILTRATION OF THE WATER SUPPLY FOR THE CITY OF ST. LOUIS.

A purified water supply for the City of St. Louis has long been needed but the increased pollution of the present supply by the sewage of the City of Chicago from the recent completion and opening of the Chicago Drainage Canal has brought a sharp realization of the dangers from the use of this impure and unfiltered water. The adoption of a plan that will successfully accomplish the object desired, owing to the extreme turbidity of the water, is a difficult matter. For that reason the defeat, by the lower branch of the legislative body of this city

of a bill providing for an appropriation of \$50,000 for experimental filtration purposes, is greatly to be deplored.

There is probably nothing of greater importance to the general health of a city than its water supply, and with its increased pollution that comes from the increasing number of population along its source of supply, artificial purification becomes a necessity.

Two methods of filtration appear to be feasible, the English sand-bed system, and the American mechanical system. The American system is more rapid than the European method, and consists in sedimentation before filtration by the addition of a coagulant. Something less than a grain of alum is added to each gallon of water as it goes into the filter. The lime in the water decomposes the alum forming an aluminium hydrate which, together with the inorganic matter, settles upon the sand at the bottom of the filtering bed. By this means the water is purified of a larger quantity of foreign matter held in suspension before it goes to the filter and thus enables a larger quantity to pass through the filter bed in a given time. The essential point in sand filtration is the very slow rate at which the water passes through and this rate is further impeded in proportion to the amount of foreign matter held in suspension in the water. Other materials than sand might be used as well but the speed could not be increased without damage to the results. Where the interspaces are not large enough to permit bacteria to pass readily, Koch fixes the rate at four inches of water per hour, which would require three hours for a square foot of filter surface to filter a cubic foot of water; at this rate an acre will filter about 3,000,000 gallons a day. For the needs of a city of the size of St. Louis a filter surface of possible fifty to seventy-five acres would be necessary. Sand filtration has reached its greatest perfection in Germany where the water supply of a number of large cities is thus purified, notably Berlin and Hamburg. Seven-eighths of the water supply of London, England, is purified by sand filtration, but this water is supplied by private corporations and not by the city.

The marked decrease of water-borne diseases as a result of the filtration of the water supply will be one of the most notable and most beneficial effects of filtration. This has been repeatedly shown by the decrease in the number of cases of typhoid fever in cities using filtered

water compared with that of its previous condition. In view of the added danger from Chicago sewage this alone is sufficient to render filtration necessary. It is now generally conceded that malaria is also to be added to the list of water-borne diseases.

The cholera outbreak at Hamburg in the winter of 1892 and 1893 from an accidental pollution of its water supply was prevented from becoming epidemic only by filtration by that city of its water supply. The plant for this purpose having been hurried to completion.

The use of the water in its present turbid condition is repellant to the majority of people and particularly to those who are not accustomed to use water of such character. It, therefore, becomes a commercial drawback to the city as well as one of a sanitary nature.

The bill providing for an appropriation for experimental filtration was defeated on the grounds that only one method is available and that experimental filtration is unnecessary, which is in opposition to the opinion held by the city's water commissioner.

The necessity for the purification of our water supply is urgent, and the city officials should eliminate all other interests, save that of the best welfare of the city, and decide upon some course of procedure. If experiments are necessary, the sooner made the better; if not, let provision for the erection of a filter plant be made at once.

Another "Cure" for Tuberculosis.—Attracted by the well-known trait of American people to enjoy being humbugged and probably also by the tendency of tuberculous patients to try anything that gives promise of relief, a Frenchman by the name of Crotte has come to this country with a new method of treating this disease, for which he makes extravagant claims. According to the *N. Y. Medical Record*, the system was faithfully tried for a period of three months in the wards of St. Luke's Hospital, New York, and was found to be of no value whatever. M. Crotte's attempts to exploit his tuberculosis "cure" in this country have not met with an unqualified success among the physicians of New York or the members of the American Medical Association. This field in the United States has been already somewhat over-worked by native—or we might rather say, resident—talent.

SOCIETY PROCEEDINGS.

ST. LOUIS MEDICAL SOCIETY.

*Meeting of March 17, 1900; Dr. Robert M. Funkhouser.
President, in the Chair.*

DR. J. K. BAUDUY read a paper (see page 241 of this number) entitled

Post-Febrile Insanities, Relating Particularly to La Grippe and Typhoid Fever.

DISCUSSION.

DR. A. E. MINK agreed with the essayist regarding the etiological factor of high temperature. He thought that pathologists are coming to the conclusion that the rise of temperature is a sanitary process on the part of Nature for the purpose of combatting and destroying micro organisms and toxic products, to literally burn them up. He believed that too much importance was attached to the thermometric readings, and related an instance in which the temperature had remained normal through the entire course of a severe attack of appendicitis followed by septic peritonitis, the patient dying on the eighth day.

He was satisfied from his experience that too much of the antipyretic treatment is not only useless but dangerous. He concurred in the opinion of the neuropathic origin of high temperature. The nervous system is the principal one that controls the mechanism of the body by which a constant temperature of 98.8 is maintained and if the temperature is valuable for anything it is for indicating the presence of toxic products in the organism.

The fact of insanities as sequelæ of fevers has long since been demonstrated. Fever plays an important part in the production of many insanities, particularly in neuropathic individuals. In the case of

a man, in his practice, 35 years of age, with a neuropathic history, a severe attack of typhoid fever accompanied by high temperature and marked delirium was followed by a mental derangement which terminated in *paranoia*.

In regard to the effect of phthisis upon the mind he mentioned an instance of a young man, 25 years of age, suffering from that disease who had in addition all the characteristic delusions, illusions, and hallucinations of *delirium tremens*, though he was positive that he was not suffering from alcoholism. His symptoms were severe, requiring large doses of morphine and hyoscine to keep him quiet. If the disease improves his mental condition improves and this seems to coincide with the accerbatation of the pulmonary trouble. This has led him to suspect that there might be some toxins produced by the bacillus of tuberculosis which resembles alcohol in its action.

The euphoria of phthisical patients as well as their pronounced sexual symptoms are well known, patients even in the very late stages of the disease seeking sexual intercourse, so that it seems as if the bacillus of tuberculosis has a peculiar effect upon the nervous system. Ludwig Meyer, in 1857, called attention to the so-called acute lethal hysteria which runs a course similar to *delirium acutum*; he had seen several cases of it. It presents almost the same symptoms as ordinary grave delirium or its phenomena. It is a very instructive disease and demonstrates the pronounced action of the nervous system on the temperature of the body. Samuels, one of the great German pathologists, in his latest work speaks of fever as a sanitary process, a view which has been held by pathologists outside of Germany for a long time. Fever is caused primarily by the poisonous effects of micro-organisms and their toxins on the heat-regulating centers in the nervous system, especially in the brain and cord.

DR. CHAS. SHATTINGER thought it better to regard elevation of temperature as a sanitary effort than as a sanitary process. Coughing and sneezing are sanitary efforts. The elevation of temperature may reach a point where not only the microbe is destroyed but the protoplasm of the cell coagulates and other chemical and pathological changes are produced; therefore, it is well to strike a just medium to utilize the sanitary effort without allowing it to go to an extreme where

becomes a danger. The regulation of the body temperature is a two fold process—heat production, and heat dissipation. Fever is often, possibly more often due to imperfect heat dissipation than to increase of heat production. The vasomotor system is the chief regulator of heat dissipation because they control the vascular distribution of the skin and because the skin is the great organ for the elimination of heat. The skin can be influenced through the vasomotor centers in the matter of heat dissipation by means of hydrotherapy with a nicety that approaches mechanical exactitude. There is a disturbance of equilibrium within bounds which is salutary, when it transcends those bounds the equilibrium must be restored by obtaining a reaction of the vital forces of the body which will in an indirect way affect also the cause of the disease. In the use of hydrotherapy in malaria in conjunction with quinine, not only is one symptom combatted but the organism is placed in a condition to resist the plasmodium for the most powerful germicide in the body is the cells themselves. In extreme temperature their protoplasm is altered chemically, their functions and power of resistance impaired. If they can be restored or partially restored, an ally will be gained in these cells that ought not be ignored.

DR. H. C. FAIRBROTHER regretted that the essayist did not discuss those mental effects, other than insanity, which sometimes follow typhoid fever, such as idiocy, imbecility, and a general disturbance of the mental and moral equilibrium but which does not attain to the degree of insanity.

Profound idiocy is congenital, but imbecility may follow this disease and another condition of great interest may be produced. The mental and moral balance may be disturbed. He had observed this effect in more than one case. Neither the mind nor the character will be the same as before. Certain faculties may be improved, others impaired. The imagination and possibly the perception will be heightened, while the memory, the will, the judgment, and the reasoning faculties may be diminished. The moral sense may be damaged, or the power of the will so impaired as to permit immoral action that would not have been allowed before the fever. He had observed the sexual instinct greatly exaggerated as a consequence of this disease.

DR. ROBERT BARCLAY mentioned an instance in his experience in

which a slight disturbance or excitation of the nervous system would cause a rise of temperature of several degrees, the pulse rate at the same time remaining normal.

In acute delirium with vasomotor paresis of the upper part of the nervous system, the application of cold along the pneumogastric and sympathetic nerve, will at once slow down and quiet the heart's action and repress this process.

He called attention also to the beneficial effects of a cold-shower bath upon those persons whose nervous tone is below normal, sufferers from chronic rhinitis, faulty digestion, etc., the shower bath acting as a strong nerve stimulant and is markedly efficient in clearing the respiratory passages.

DR. BAUDUY said that elevation of temperature was due to three causes—the microbic invasion with the resulting development of toxalbumen, the metabolic changes which occur, and lastly, tissue exudation which occurs in febrile conditions. He also had observed in tuberculosis the appearance of symptoms simulating alcoholic delirium; likewise he had noted the same symptoms associated with cancer, and mentioned an instance of a man suffering from the rare condition of cancer of the breast who had hallucinations similar to those of alcoholic delirium which he attributed to the sapremic result of the cancerous cachexia.

While realizing the danger from parenchymatous degeneration of the organs of the body by the persistence of high temperature, he thought that there was a tendency to go to extremes and that entirely too much importance is given to elevation of temperature. He realized the influence of the vasomotors in heat elimination, and appreciated the value of cold for that purpose.

*Meeting of March 24, 1900; Dr. Robert M. Funkhouser,
President, in the Chair.*

DISCUSSION OF DR. J. K. BAUDUY'S PAPER CONTINUED.

DR. A. E. MINK said that febrile delirium differs from that of insanity in that the patient when aroused will have a few lucid moments,

answers questions correctly, appears his normal self, then lapses again into delirium which is of a muttering character.

The delirium is the result of hyperemia from increased rapidity of the heart's action associated with dilatation of the cerebral arterioles, from paralysis of the vasomotor nerves and the accumulation of products of tissue destruction in the cerebro-spinal axis and particularly in the cerebral cortex.

Post-febrile insanities are due to anemia, to the effects of fever, to the effects of the infectious process upon the quality and quantity of the blood, to the parenchymatous or degenerative changes of the cortical cells themselves, to the accumulation of poisonous products, of catabolism, or to the influence of microbes and toxins.

An acute infectious process occurring in the course of insanity may modify the course of the disease or even cure it; a number of such instances had been reported and he had also met with several.

The varieties of post-febrile insanities are most frequently those of the asthenic type, especially hallucinatory confusion and delirium. In some there is a delirium of persecution, in others stuporous dementia, as sequelæ of typhoid fever, pneumonia, and rheumatism.

DR. T. A. MARTIN thought there was no more tendency for typhoid fever to be followed by or to cause insanity than any other exhausting or prolonged disease in which sepsis enters as a factor. In his experience it was not so frequently followed by insanity as was the puerperal state.

In a large experience with typhoid fever he could not recall a single instance where the delirium continued after the pyrexia, while in a large proportion of female insane patients after adult life, child-bearing, especially when followed by sepsis or exhausting hemorrhage, was the causative agent.

DR. J. W. SMITH discussed the value of the thermometer in the diagnosis of temperature, believing that it is more valuable than the pulse in infective conditions.

DR. A. R. KIEFFER mentioned an instance of insanity occurring during convalescence from typhoid fever; this persisted for several months, ending in recovery. Also an instance of insanity associated with pulmonary consumption in its late stages.

•

DR. MINK said that heredity was another factor in the causation of post-febrile insanities; a neuropathic person succumbing more quickly to the vicious influence of disease of the cerebral cortex than one free from constitutional taint. He thought that typhoid fever played a very important part in the production of insanity.

DR. BAUDUY, in concluding, said that qualitative and not quantitative blood disturbances were the principal causes of post-febrile insanities; he did not believe the quantitative conditions of the blood supply had a causative effect.

Mania and melancholia may result from typhoid fever but the type is generally that of a confusional character.

The hallucinations and delusions sometimes seen in late stages of phthisis and cancer are mere coincidences in their simulation to alcoholic delirium.

In regard to the frequency of insanity after typhoid fever, he had seen three or four cases. Osler, in his latest work, reports five cases, and a German neurologist in a recent report of two thousand cases of insanity admitted to an asylum in Berlin within the last three years, mentions forty-five due to this cause, nearly all of whom recovered, showing that it is not an infrequent condition,

*Meeting of March 31, 1900; Dr. Robert M. Funkhouser,
President, in the Chair.*

A Case of Scleroderma.

DR. JOSEPH ROSS presented a patient having several extensive patches of scleroderma over the left scapula, shoulder, and clavicle. The principal treatment in this case had been massage. When first seen he was unable to raise the arm above the horizontal on account of the interference with the sterno-cleido-mastoid muscle; he can now raise his arm above his head and there is free movement of the lower section which had been attached to the clavicle and to the scapula. After having been under observation for four months an ulcer developed on the scapula which was closely watched to see if the scar would develop scleroderma; this, however, has not occurred. At the elbow

the ligaments of the joint as well as the skin are attached to the muscle interfering with the movements of the flexor muscles.

An Appendix Containing an Enterolith ; An Ovary Containing a Gestation Sac.

DR. HENRY SUMMA presented the specimens of an appendix containing an enterolith, and an ovary containing an ovarian fetation, both occurring in the same patient and were removed at the same operation. Patient was operated upon for appendicitis; the appendix was found to be ulcerated, to contain an impacted enterolith and a small amount of pus. While replacing the cecum after having removed the appendix, a sharp hemorrhage occurred; this was traced to the left ovary which was found to be the seat of an ovarian fetation, and was removed.

DISCUSSION.

DR. A. H. MEISENBACH said, from its macroscopical appearance, that the specimen looked like an ovarian pregnancy. It was uncommon to find appendicitis and an ovarian fetation in the same patient and at the same time. In this instance it was doubtless only a coincidence.

DR. G. WILEY BROOME was not certain that it was an ovarian fetation; it appeared to be a corpus luteum with an unusual amount of hemorrhage in the ovary. It was impossible to decide correctly from its macroscopic appearance and it should be carefully examined and reported upon later.

DR. JOSEPH ROSS said that cases of this kind are very rare and are always open to a question of doubt; the macroscopic appearances are very uncertain. While examining semen under the microscope he discovered that spermatozoa, even those apparently dead, would always turn against the current; this might be the reason for their passage through the Fallopian tubes. In some of the lower animals, in rodents and others, the ovary and Fallopian tube form one sac; in such it is easy to understand how ovarian pregnancy might occur, but in the human it is more difficult to understand.

DR. BROOME said that although the current caused by the ciliated

epithelium of the tube is from the ovary toward the womb, the ovum is fertilized in nearly every instance in the tube or in the neighborhood of the ovary and the impregnated ovum passes back into the uterine cavity, but if an ovarian or tubal pregnancy occurs it is on account of some lesion existing in the tube itself.

DR. W. H. FORD remarked that there are now a number of cases on record of so-called ovarian pregnancy. Until recently the existence of true ovarian pregnancy was entirely discredited. Tait affirmed that he had been unable to find in the museums of Europe a single case in which true ovarian pregnancy had existed. A real ovarian pregnancy is an impossibility in the intact ovary, the theca of the ovary being impervious to the spermatozoa; but what is called ovarian pregnancy, apart from cases recognized as tubo-ovarian, is caused by the rupture of a Graafian follicle without extrusion of the ovum, the ovum remaining adherent to the wall of the ruptured follicle and the spermatozoa reaches it in the cavity of the follicle. Physiologically, this could not be called an ovarian pregnancy, but anatomically, it is properly so designated.

With respect to the passage of the spermatozoon through the Fallopian tube, it is generally believed now that some kind of attraction is exerted between the ovary and spermatozoon. It has been found that if a capillary tube filled with a solution of malic acid be placed in water containing the movable antherozoids or male elements of ferns, these will congregate to the orifice of the tube, malic acid having been found to be excreted by the female organs of these plants. There may be an excretion of some substance by the Graaffan follicle or ovum which attracts the spermatozoon in a similar way.

He was not positive that this was a case of ovarian pregnancy. If it be so it is rare interest, as the possibility of such an occurrence is beyond all doubt. From a practical point of view, it is always important, in the female sex, in cases where appendicital symptoms exist, to take into consideration the possibility of a simultaneous affection of the ovaries; both organs should be examined if possible. In many cases the appendix is found adherent to an inflamed ovary.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of February 15, 1900; Dr. Chas. J. Orr, President,
in the Chair.*

**Development of the Fetal Bladder and Conditions Leading
to Exstrophy.**

DR. T. C. WITHERSPOON.—Defects in cases of this kind were like defects in other portions of the body; the causes occur early in fetal life. These causes may be traumatic, toxic, inherited, or atavistic. When the corpora cavernosa is formed, which is not before the third and into the fourth month, possibly the genital tubercle is split in two and illy developed. Possibly the defect rests upon an original disturbance in the spinal cord. Certain cells make their appearance earlier than other cells and their association with the periphery might be interfered with. It is not an impossible theory to suppose that a lack of development of these parts depends upon an alteration in the lower portion of the spinal cord and the deviation from the normal would be either a primary lack of the nerve-cells of the cord, essential to the undeveloped cultures, or a secondary lack of association with the periphery. Increased distention of the allantois during early fetal life, before the parietes are closed, is usually accepted as the prime cause of the defect. The time of renal development and activity as related to the closure of the abdominal walls will negative this theory. No explanation has as yet been given which will answer all conditions found.

DR. HENRY JACOBSON believed the most plausible theory advanced was that of Branth, in whose opinion these cases are due to a twisting of the pubic bone-tissues on their axis in early fetal life when the allantois and umbilical vessels communicate and when the abdomen is open. At that time an accidental twisting of the pubic bone-tissues on their axis, by which the tissue to form the penis is brought out and over the pubic commissure, will cause an interference in union of sides of linea alba. The speaker thought this the most plausible of any of the theories advanced—the embryonic skin-tissue interfering with the closure of these parts the bladder will later be pushed through and everted, which accounts for the hypospadias and epispadias which go hand in

hand with the closure of the bladder. He could not understand how the theory of rupture would cause a failure of union from the bladder down to the end of the penis. He thought the prostate was never fully developed in these cases. This organ was always found to be rudimentary. He believed this was a proof that hypertrophy of the prostate was due to the frequent contraction of the muscular portion of the bladder.

DR. C. A. W. ZIMMERMANN had never seen a case of exstrophy of the bladder. Of the theories advanced he thought the most plausible one was that of developmental defect. Such defects were seen in other organs, such as the prostate, seminal vesicles, and other parts of the anatomy. He could not understand how the theory advanced by Dr. Jacobson could explain the case.

DR. N. W. SHARPE said it was unfortunate that so little could be said to-day that would be of any real value. It is a surgical axiom that in a condition for which innumerable operations are laid down, there has not yet been determined a cure.

In these cases probably the earliest effort was that made by Trendelenburg who endeavored to approximate the separated pubic bones. He was followed by König who did an osteotomy of the pubic bones. Shortly after came the era when the rectum played a rôle and the Maydl operation was devised. In the operation of which the Maydl is a type, utilizing the rectum as the new bladder, there is marked danger of ascending infection, it was hoped that the oblique uteral exit would serve as a valve; this, however, was not a success. These methods were subsequently modified and improved by Fowler, who devised a tongue-like projection, as mentioned in the paper; this acting as valve may possibly diminish the danger of ascending infection. Statistics are, however, too meagre as yet. There are many other operations and devices, all more or less successful. A paper on this subject by Dr. Bransford Lewis is up to date. The operation alluded to performed by Rutkowski was reported only last August in American literature, and the operation by Mundel was reported in December, 1899.

The speaker had not had an opportunity to try either method, but would be more inclined to advise the transplantation method rather than the transference of the ureters, or the ureters and portion of the

bladder into the rectum. The danger, as suggested, *is not slight*. Ascending infection *does* occur. If that operation is insisted upon, it is not entirely gratuitous to suggest the formation of an artificial anus in the left inguinal region, diverting the entire bowel, and later the transplanting of the ureter into the rectum below that point, in which case there would be at least a greatly diminished probability of infection. The choice lying between ectopia vesicæ and an artificial anus plus an artificial bladder.

The method of Ruthowski was ingenious to say the least; he uses a median incision about six centimeters long. A coil of ileum is caught and divided at two points, about six centimeters apart. Proximal and distal tubes are united. The isolated segment is now divided opposite its mesentery giving a more or less rectangular flap fed by its own mesentery. This flap is used to fill in the bladder hiatus, after adequate separation of bladder from abdominal wall has been made. This operation has met with success upon a human subject and upon animals. The microscope shows that the mesenteric vessels become obliterated and regressive changes take place in the intestinal epithelium, gradually becoming replaced by flat epithelial cells. A satisfactory adaption is thus noted. Eight weeks after operation patient could retain 25 to 30 cubic centimeters of urine. The urine itself had changed from a foul to a relatively normal condition.

The Mundel operation was of such recent date that the speaker did not think an estimate of its real value could yet be offered. The operator takes a bladder-flap from a sheep or dog and transplants it into the abdominal wall, interposing gold foil between flap and superficial fascia; later this living flap is to be thrown over the bladder defect and duly attached.

DR. JACOBSON said he thought Dr. Sharpe mistaken as to the size of the lumen; it should be 6 c.c. The method of cutting of a portion of the rectum and using that as a bladder, planting the ureters into the rectum in the manner described, the speaker thought most feasible, with less danger of ascending renal infection. One method not touched upon in the discussion was that of Harrison, of England. This operator resects one of the ureters, preferably the right, and transplants into the side. After establishing a urinary fistula, he removes the other

kidney, ureter, and the bladder, and closes the abdominal wall by a plastic operation. Another method which might be more satisfactory would be to cut off the rectum at the sigmoid flexure and use the rectum as a bladder, making an artificial anus for the bowel. He thought there would be less liability of infection by thus separating the feces and the urine, and the patient could retain the urine several hours in the artificial bladder. The epithelium of the rectum in these cases after a time changes to the squamous variety.

DR. R. B. H. GRADWOHL read a paper (see page 269 of this number) entitled

A Preliminary Report on the Etiology of Scarlatina.

DISCUSSION.

DR. GIVEN CAMPBELL believed that Dr. Gradwohl had found the cause of scarlet fever. The paper opens a great many interesting questions. He asked the essayist whether the discovery of the bacterium was yet of any clinical value; whether it could be stained, and whether it could be secured from the scales of the skin. It would be interesting and he thought important to know how the culture resists the action of disinfectants. The biological characteristics of the germ are interesting in that it resembles a good many of the ordinary bacteria of the skin. This fact might be used as an argument against its being the germ of scarlet fever. All pathogenic germs were primarily saphrophites which assumed a habit of virulence, and the fact that scarlet fever probably started in the skin makes it still more probable that this diplococcus is the germ of scarlet fever and has taken on its virulence in the way we would expect and is thus able to invade the throat and blood and cause all the symptoms found in a well-defined case of scarlet fever. He believed everything pointed to the fact that the cause of the disease had been found.

DR. GEORGE HOMAN said that he would not discuss the bacteriology of the organism, but the statements of Dr. Gradwohl, corroborated by Dr. Campbell, seemed to show that the identity of this long-wanted microbe had been finally established. The finding of this

microbe would argue that other bacteria of the exanthemata class of diseases, as small pox and measles, might also in time be discovered. An important fact from a public health point of view was what the essayist mentioned in regard to milk. This is regarded as an excellent culture medium. This fact, he believed, would throw light on the occurrence and spread of scarlet fever. The close association of swine and kine in dairies and farm yards would explain how this disease originates or spreads, often in a mysterious way, as heretofore observed. As he understood Dr. Gradwohl, there has been thus far no definite experimentation as to the means of reproduction of the organism—no spores had been found. The thermal death point is not very high. A very promising beginning has certainly been made and he would look forward with interest to any further developments in this direction.

DR. CAMPBELL said that in bacterium just demonstrated there is a germ to which animals are susceptible and which produces in them a disease similar to scarlet fever. He thought it probable that an anti-toxin for this disease would sooner or later be produced and believed it ought to be done.

DR. CLARENCE LOEB had had under his care at the City Hospital five of the seven cases reported by Dr. Gradwohl. All the cases were clinically true scarlet fever. Such cultures were made, and in all the cases the diplococcus that we see under the microscope this evening was found. He thought that dogs and cats might play a part in the spreading of the disease, although they were not susceptible to it. He suggested that further examinations of these animals be made to ascertain if the germ could not be found in the fur and if a culture could not be obtained from this source.

DR. GRADWOHL, in closing, said he did not think that cultures made from the throat would be much of an aid to diagnosis for the reason that the scales appear so late in the disease. There are also many different kinds of micro-organisms in the skin some of which resemble this diplococcus closely and it takes considerable time to separate them, which must be done by plating, etc. If the germ could be found in the throat early in the disease and a culture made from this, it would aid considerably in the diagnosis. He had not yet made an attempt to obtain the toxin from the diplococcus scarlatinæ but would

take that up later. He thought that it might be difficult to obtain an antitoxin on account of the loss of virulence of the germ, though this virulence can be recovered by passing through a susceptible animal. The size and susceptibility of swine render those animals excellent for that purpose. Dr. Class had written to him in regard to finding the diplococcus in the urine, saying that he had found in a great many cases that pure cultures could be made from this fluid. This might serve to explain the renal complications of scarlet fever. Dr. Class laid stress upon scarlet fever and sore throat without skin manifestations. This was an important point, for a great many cases of scarlet fever run their course without skin manifestations. He recalled several cases seen in the hospital last year that could be explained on this ground. This, too, might explain the immunity of some individuals when thrown in contact with the disease.

DR. JACOBSON asked if he had found the diplococcus in sections made of the kidney.

DR. GRADWOHL said he had prepared sections but had not been able to examine them as yet. He expected to do so later. In regard to this, Dr. Class found in organs of the swine thus examined gross lesions exactly resembling lesions found in acute nephritis in man. On this point he intended to make a more extended study.

DR. HOMAN asked how early in the disease the germ could be found in the urine, and also the probable avenue of infection by which the disease is acquired, and whether, as far as observation had extended, desquamation is the means of propagation.

DR. GRADWOHL said he had found the germ at about the end of the first week from the throat. In the blood he had found it from the first day of the disease, and he thought probably it would be found in the urine at the same time. He had examined the urine in only one case. He believed the disease was undoubtedly disseminated through the scales from the skin of the patients.

Dr. McBurney Resigns.—Dr. Chas. McBurney, of New York, the chief surgeon at Roosevelt Hospital of that city, has resigned and has severed all connection with that institution. Ill health and a need of rest was given as the cause.

REPORTS ON PROGRESS.

GENITO-URINARY DISEASES.

Reflex Neurosis From Phimosis.

Edie (*Philadelphia Medical Journal*, March 24, 1900) cites five cases relieved of various disturbances by removal of elongated and tight prepuces. In two of the cases reported the patients were adults 27 and 42 years of age respectively, with marked symptoms of insanity in each. After circumcision the patients were relieved of all abnormal and irrational symptoms.

Operations for Vesical Stone.

In an article on the relative merits of operation for the extraction of vesical stone in the male, with observations on the suprapubic and left lateral perineal methods, Schuyler Calfox Graves (*N. Y. Medical Record*, March 3, 1900), after calling attention to the respective mortality rates quoted from Dennis' "System of Surgery" of the three operations for stone in the male bladder, proceeds to discuss the merits and demerits of each. Although granting to litholapaxy the lowest rate of mortality, he concludes that because of the general lack of the skill required in its proper performance the modified suprapubic and perineal operations will yield better results on the whole in the hands of the many. He then reviews the modifications of the suprapubic and perineal operations made by different operators, and after discussing the advantages and disadvantages of the same he describes his method of procedure in suprapubic cystotomy and in perineal section. In suprapubic cystotomies he treats the wound with the solid nitrate of silver stick to prevent absorption of septic matter; this modification of Senn's method, shortens the period of five days waiting for the formation of granulation to as many minutes. In perineal sections he uses an instrument instead of his finger for the purpose of dilating the prostatic urethra and vesical neck.

Cystitis from the Typhoid Bacillus.

Thos. R. Brown (*N. Y. Medical Record*, March 10, 1900) reports a case of cystitis, the cause of which, he thinks from the evidence, was the typhoid bacillus introduced into the bladder by catheterization. The patient had no symptoms of typhoid fever at the time of the cystitis though she was the subject of an attack thirty-five years before. Notwithstanding the fact, demonstrated by a number of cases reported, that the typhoid bacillus may remain latent in various parts of the body for years and yet under certain conditions be capable of causing a manifestation, Brown does not believe that in this case such an explanation will suffice, owing to the great length of time since the patient was the subject of the typhoid attack. He thinks it not improbable that if a complete bacteriological examination were made in all cases of cystitis produced by catheterization, the typhoid bacillus would be found in a few of them.

Gonorrheal Rheumatism.

The March (1900) number of *L'Union Medicale du Canada* contains the introductory pages of an article on acute gonorrheal rheumatism by Dr. T. Parizeau. We shall look forward with more than ordinary interest to the completion of this article, as there seems to be a promise of new light on the perplexing question of the treatment of this disease.

The Neglect of Sexual Symptoms in the Treatment of the Male Genito-Urinary Organs.

Follen Cabot (*N. Y. Medical Record*, September 30, 1899) deplors the apparent lack of knowledge on the part of medical men in general and the genito-urinary specialists in particular, of the part the sexual organs, *per se*, play in diseases of the genito-urinary organs, and he pleads for a more thorough study of the sexual organs both in health and disease. He states that functional disturbances of the sexual organs are present in many patients who present themselves for treatment and that these patients can be relieved only by local treatment and they should be treated by the legitimate profession and thus be kept out of the clutches of quacks. He speaks of the large number of patients with urethritis seriously damaged in their genital apparatus by

improper and violent methods of treatment and, and holds the Janet method of irrigating the urethra and bladder responsible directly and indirectly for much of this damage. He mentions another class of cases in which there has never been a discharge of any character but in which the sexual organs have been injured by improper sexual intercourse and which require considerable skill to diagnose. The three classes mentioned may be cured by proper local treatment if tuberculosis is not present. He cites two cases in his experience to illustrate the part sexual disturbance may play in gonorrheal and non-gonorrheal diseases. In each of these cases a disturbance of the seminal vesicles was present and as a proof that to this disturbance was due the sexual symptoms he gives the fact that the treatment by stripping the seminal vesicles at proper intervals brought these organs back to the normal state and that the sexual symptoms disappeared.

In concluding his paper he sums up as follows :

1. Sexual symptoms in genito-urinary practice should be carefully investigated and thoroughly studied.
2. Indiscriminate use of irrigation is distinctly against scientific teaching, its effect on the genital organs often being injurious and causing the spread of the gonococcus.
3. Before urethral instrumentation is employed every case should be examined per rectum with a finger educated to the rectal pouch.
4. Various forms of remote nervous symptoms are directly traceable to disorders of the sexual organs.

BURNETT.

NEUROLOGY.

A Case of Locomotor Ataxia Beginning in the Sacral Cord and Presenting Unusual Sensory Symptoms.

Charles J. Aldrich (*Medical News*, New York, November 25, 1899) in a very careful report of the case, described by above title, makes some interesting observations as to the sensory phenomena. The patient, a well-nourished woman, 47 years of age, had been married, but had not borne children. Her first sensation was of a heavy weight in

the rectum which soon was followed by some loss of control of rectal and vesical sphincters and by ataxic gait. Then a great sensitiveness to hot and cold water appeared. Any deviation from the temperature recognized by the skin as normal was felt as a pain. A year later she suddenly discovered that she was totally blind in the left eye, and at this time she suffered from laryngeal crises. Examination about this time showed station poor; gait ataxic; both knee-jerks absent; plantar, pupillary, skin, and pharyngeal reflexes all absent. Analgesia was marked over skin of feet and legs; above the line of the ilia this disappeared. But over this entire area any, even moderately cold or warm application, was felt as a pain, but its temperature character was unrecognized. A year later the patient was insensible to the prick of a pin over the entire integument except the eyelids, but the peculiar temperature phenomena were still present. Fulgurating pains occurred early and were confined to the areas of tactile anesthesia and especially to the perineum. Gray atrophy did not follow the blindness in her left eye until after two or three years.

Some Points in the Diagnosis of Traumatic Injuries of the Central Nervous System.

J. T. Eskridge (*Jour. Amer. Med. Ass'n*, March 10, 1900) compresses into a few pages a large number of differential points in the diagnosis of traumatic injuries of the central nervous system for the benefit, more particularly, of railway surgeons, who are so frequently called upon to determine the relation a given injury may sustain to a real or feigned condition.

The fact that organic lesions may have been present months or years before the injury may be kept in mind, especially as the patient is almost sure to claim all to be the result of the injury.

Even preceding hysteria and neurasthenia must, if possible, be determined, and an examination immediately after the accident is more likely to bring forth reliable information than one made later.

Eskridge asks that it be borne in mind that a person may be suffering from an organic lesion of the nervous system and at the same time manifest symptoms of hysteria and neurasthenia. The last affections to be thought of in making examinations are hysteria and neuras-

thenia, and one positive sign of organic lesion is of more importance than any number of functional symptoms.

It is not possible to review the points taken up in this paper without exceeding our limit of space, but we would commend the judgment of Eskridge in putting into tangible form information which, while not new, is usually only to be had by consulting a considerable number of books.

We believe by paying close attention to all the patients referred to that few would err in the very difficult task of determining what was persistent and what due to the injury, what is real and what is feigned.

Peroneal Types of Progressive Muscular Atrophy; Report of Two Cases.

Theodore Diller (*Philadelphia Medical Journal*, March 17, 1900) reports two cases of above condition in a brother and sister. The girl began to show wasting and loss of power in the legs at the age of 16, the boy at 15. The gait was slow waddling in each and the knee-jerks were absent. Response to electricity very sluggish in both. Sensation was normal and neither had any pain.

Diller says it is pretty generally agreed that the peroneal type is to be distinguished from the dystrophies or myopathies in that the disease does not originate in the muscle itself. It, however, is like the myopathic type of atrophy in that it is due to an embryological defect and is a family affection; but whether the anterior horns of the spinal cord or the nerve are primarily involved, or whether sometimes one and sometimes the other, or both, is not yet fully determined. Further post-mortem studies are needed to definitely determine the pathology of the disease.

BLISS.

OBSTETRICS AND GYNECOLOGY.

The Influence of Retained Placenta Upon the Milk Secretion.

Flandrin, of Genoble, France, reports a case (*Jour. de Med. et de Chirurg. Prat.*) which supports Lhermitte's theory, that after an abortion, a miscarriage, or a premature birth, the secretion of milk does not

occur until the uterus has been completely emptied of its contents. The patient, two and a half months' pregnant, had a severe hemorrhage resulting in the loss of the fetus, the placenta, however, remaining in the womb. Nothing unusual occurred until eight days later, when the placenta, after a profuse hemorrhage, was expelled. Two days later, the breasts, which previously were empty, became turgid with milk; this occurred without the administration of any substance for the purpose of increasing the milk secretion.

Flandrin mentions a similar instance reported in *La Sage Femme* by Madame Paule Dervin, a midwife. A woman, 25 years of age, was delivered at term of a living child. The uterus remained larger than normally after birth and on the fifth day following the birth of the child a fetus of about four and a half months was expelled. The midwife reports this as an interesting case of superfetation (?). It was particularly observed in this instance also that the milk secretion was held in abeyance until after the expulsion of the five and a half months' fetus, when the breasts became filled with an abundant milk fluid. Previous to this the child had to be artificially nourished.

Penetrating Wounds of the Pregnant Uterus.

Estor and Puech (*La Revue de Gynecologie et de Chirurgie Abdominale*) discusses, in a lengthy article, the question of wounds of the gravid uterus, paying particular attention to the cause and treatment of this condition,

The prognosis in these accidents appears to be less grave than generally supposed. It is only after the third month that these accidents are met with, and after the uterus rises above the symphysis the increase in its size multiplies the chances of being injured.

The injury has resulted from various agents, a pointed instrument, such as the prong of a fork, a nail, hairpin, pointed stick, etc., by a cutting instrument, such as a knife, hatchet, or sickle. Sometimes from a gunshot wound. Again, the womb has been torn open by the horns of an infuriated animal.

Out of a series of forty cases, they give the following proportion in which these causes have occurred:

Wounds from pointed instruments.....	6.
Wounds from cutting instruments.....	11.
Wounded by firearms.....	10.
Wounded by the horns of infuriated animals.....	13.

The circumstances under which these occurred are equally varied. The majority were due to an accident; some were due to a criminal attack, and others resulted from a suicidal attempt.

In a case reported by Planchon, a woman was squeezed against a wall by a wagon backing against her, was wounded by a long nail in a plank in the rear end of the wagon

In a case reported by Czazewski, a woman, five and a half months pregnant, while running with a fork in her hand, fell in such a manner that the prongs were driven into the abdomen above the pubis. She recovered, although she had also perforation of the intestines.

Tarnier reported to the Congress of Obstetricians and Gynecologists, at Bordeaux, an instance where a woman, pregnant about five months, in throwing herself upon her bed accidentally thrust a hatpin through the abdomen into the womb.

Hays gives the history of a negress who was accidentally wounded in the womb by a pistolball which had glanced about fifteen meters (50 feet) from the spot at which it had been fired.

Among the relatively frequent instances (in France) where the gravid womb has been injured by the horns of an animal, that described by Bartholin (*Essai sur l'art des accouchements*, Paris, 1779), is the oldest and most frequently quoted: A pregnant woman was gored by an ox and the child torn from the womb. The woman died at the end of 36 hours, while the child lived a month.

Voluntary traumatism of the pregnant womb is not rare. It is caused by the woman herself and is most frequent in those cases where pregnancy results from illicit intercourse.

Sometimes the long duration of labor and the severity of the pains brings on a condition of frenzy, in which the woman may, in order to hasten deliverance, practice the Cesarean operation on herself.

The authors quote such an instance from von Guggenberg, who returned the intestines which had escaped from the abdomen, closed the wound, and the woman recovered in spite of the severe hemorrhage

which occurred as the result of her act. They quote another similar instance from Harris in *Weiner medicinische Wochenschrift*, in which the woman opened her abdomen and uterus with a razor. The child lived and the woman recovered.

According to these authors, the number of cases in which the womb has been torn open by the horns of animals predominate and several women thus injured have recovered easily and the infants themselves have survived.

In each case the prognosis was less serious than had appeared. In twelve cases in which expectant treatment only have been relied upon there had been ten recoveries and two deaths. In eighteen cases in which active intervention (sutures, celiotomy, Cesarean section) had been undertaken, there were fourteen recoveries and four deaths. The increased death rate was due to the fact that intervention was undertaken only in the most serious cases.

DUDLEY.

OPHTHALMOLOGY.

The Mydriatic Action and Value of Euphthalmine.

Euphthalmine hydrochlorate is a synthetic product, very soluble in cold water, and was brought to the notice of the ophthalmologists in 1897 by B. Treutler. It is used in solutions of from 1 to 10 per cent., and the claims for it are :

1. Rapid dilatation of the pupil.
2. Duration of dilatation is short compared with other mydriatics.
3. Paralysis of accommodation slight.
4. Does not menace intraocular pressure.
5. No effect on the corneal epithelium.
6. Does not produce any local irritation.
7. Produces no systemic effect.

Herman Knapp (*Archives of Ophthalmology*, May, 1899), after using it for six months, concludes that as an aid to ophthalmoscopic examinations it is without a rival

He finds that one instillation of a 10 per cent. solution dilates the pupil sufficiently for ophthalmoscopic purposes in from fifteen to

twenty minutes, and that the maximum dilatation was produced in from thirty to forty minutes. The writer, in two cases, received the impression that euphthalmine, like atropine, had a tendency to increase the tension of the eyeball.

Edward Jackson (*Ophthalmic Record*, July, 1899) uses 4 per cent. solution and finds the pupil beginning to dilate in fifteen minutes, and to reach its maximum in about an hour. By the end of the second hour the pupil begins to contract, and recovery is complete in about twenty-four hours. He found that with a 5 per cent. solution about one-fourth of the total accommodation is lost at the time of maximum effect, and with a 1 per cent. solution about one-twelfth. This is three or four times as much impairment of accommodation as is produced by solutions of cocaine of equal strength.

Winselman (*Klinische Monatsblätter für Augenheilkunde*, July, 1898) sums up his experience with euphthalmine as follows:

1. The pupillary dilatation begins in about the same time as with the ordinary mydriatics.
2. Accommodation is so little influenced that the effect is practically of no importance.
3. There is no change in the intraocular pressure.
4. No toxic symptoms have yet occurred from its use.
5. It does not irritate either the conjunctiva or the cornea.
6. The mydriasis disappears rapidly.

The Spontaneous Disappearance of Senile Cataract, With Report of a Case.

Walter L. Pyle (*Philadelphia Medical Journal*, March 17, 1900) classifies the reported cases as follows:

1. Cases in which there was absorption after spontaneous rupture of the anterior or posterior capsule.
2. Cases in which there was spontaneous dislocation of the cataractous lens.
3. Cases in which there was intracapsular resorption of the opaque cortex, and sinking of the nucleus below the axis of vision, after degenerative changes in Morgagnian cataract, with rupture of the capsule or dislocation of the lens.

4. Cases in which there was complete spontaneous resorption of both nucleus and cortex without reported history of ruptured capsule, dislocation, or degenerative changes of the Morgagnian type,

5. Cases of spontaneous disappearance of incipient cataract without degenerative changes or marked difference in refraction.

The author's case belongs to the fourth class. The patient was a man 73 years of age, who had marked senile changes in his circulatory system as well as prominent muscular and nervous symptoms. Twenty-five years ago he became blind in the left eye. He consulted Dr. Holmes, of Chicago, whose diagnosis was mature cataract. Operation was deferred on account of the perfect vision of the right eye. Ten years later the cataract had been totally absorbed. The author found an absolutely aphakic eye, with no signs of lens or capsule. The media were perfectly clear, but there was evidences of an old chorio-retinitis. Central vision w. + 13 D. = $\frac{30}{40}$, but in the periphery both the form and color fields were almost obliterated. There was absolutely no history of an injury or operation, and the cornea showed no cicatrix. He did not remember of ever having had pain or inflammation in the eye.

The author cites a number of cases that have been reported, and gives a bibliography, chronologically arranged, from 1802 to the present time.

SHOEMAKER.

PEDIATRICS.

Lesions of the Liver in Young Children.

The following is a summary of a study of lesions of the liver in young children made by Freeman (*Archives of Pediatrics*, February, 1900):

1. Descent of the liver down the right side of the abdomen so that the right lobe reaches below the crest of the ilium, occurs not very rarely in infants, and particularly in those in whom the liver is enlarged.

2. Fatty livers occur very frequently in infants and children who die at the foundling hospital, or in about 41 per cent. of all cases

3. The condition of nutrition of the child, as expressed by the absence of fat in general and wasting of tissue, apparently has no con

nection with the fatty condition of the liver; the condition of nutrition in the cases having fatty livers averaging about the same as in the whole number of cases.

4. Fatty livers occur rarely in the following chronic wasting diseases: Marasmus, malnutrition, rachitis, and syphilis, unless such condition is complicated by an acute disease.

5. With tuberculosis, fatty livers occur not more often than with other conditions.

6. Fatty livers occur most often with the acute infectious diseases and gastro-intestinal disorders.

7. The two cases of cirrhosis of the liver examined by the writer ran a comparatively acute course. The livers, on section, showed a marked hyperplasia of the so-called new-formed bile-ducts.

8. Focal necrosis of the liver may be a lesion of measles.

Vomiting and Cardiac Failure in Diphtheria.

Vilby (*Medical Chronicle*, 1899) concludes that signs of heart failure are much more common than are paralysis in other parts and have an earlier date of onset. These signs are such as may be ascribed to muscular failure. Vomiting is usually followed by heart failure and this is distinctly anterior to that of paralysis in other parts.

The Estimation of the Leucocytes of the Blood as an Aid in Diagnosis.

Head (*Pediatrics*, February 1, 1900) calls attention to the great value of the estimation of leucocytes in the diagnosis of diseases in children. Leucocytes are present in the circulating blood of children in greater numbers than in the blood of adults. The blood of an infant at birth will count from 17,000 to 21,000 white cells to the c.mm. That of a baby of six months, 12,000; a child of one year, 10,000; one of four years, 9,000; while from six years onward the leucocyte count is practically that of adult life, namely, 7,500 white cells to the c.mm.

The following diseases are accompanied by a more or less marked leucocytosis: Suppurative otitis media, suppurative appendicitis, osteomyelitis, pneumonia, meningitis, pyemia, scarlatina, and infectious diarrhea. An absence of leucocytosis is found in influenza, tubercu-

losis, typhoid fever, and measles. Tonsillitis, diphtheria, and rheumatism are usually accompanied by a leucocytosis.

The writer cites the histories of fifteen cases in which the differential diagnosis was made by the aid of a blood count.

Bednar's Aphthæ; Geographic Tongue.

Jacobi (*Archives of Pediatrics*, January, 1900), in a clinical lecture, calls attention to two interesting diseases of the mouth. The first is Bednar's aphthæ. The patient was a nursing baby, four weeks of age, who presented a sore spot, partly on the tongue, partly on the floor of the mouth, with a grayish-yellow surface. A similar condition was found over a large part of the palate and alveolar ridge. The mucous membrane over the gums was thin and delicate. The cause of this condition is excessive scrubbing of the mouth, which rubs off the epithelium and secondary infection. The treatment is to discontinue the rough washing and sponge mouth gently with a solution of chlorate of potash.

The second case was one of geographic tongue. The tongue was red in large and small spots, which were raised above the level, and exhibited the papillæ considerably enlarged. These spots were surrounded by more or less regular, branching and interlacing lines that are raised and consist of the swollen papillæ filiformes and their epithelia. This geographic tongue or psoriasis of the tongue is in itself innocent and requires no treatment. It is often congenital and persistent.

Heart Disease in Childhood and Youth.

Chapman (*Clinical Journal*, October 11 and 18, 1899) gives the chief signs of cardiac distress: 1. Palpitation; 2. Breathlessness; 3. Cyanosis; 4. Hemoptysis, common in mitral stenosis; 5. Pallor. In aortic lesions most apt to have syncope and faintness. Fainting in closed hot rooms is very common. In the treatment the following points must be considered: 1. Clothing; 2. Place of residence; 3. Diet; 4. Education; 5. Exercise. The skin must be protected constantly by woolen underclothing. Living in a valley is objectionable. Food should be eaten at regular meals and those foods omitted which

have a tendency to cause flatulence. Education should not be neglected, the mind must be kept employed. Games and sports should not be interdicted, but those which demand sustained competitive or execution should not be allowed. As to medication, free purgation before the administration of heart tonics is most useful. Alcohol is useful in emergencies. Digitalis and nux vomica must be carefully supervised. Nauheim baths are rarely called for in the case of children.

The Blood in Gastro-Enteritis.

Contrary to our general belief, P. d'Orlandi (*Progres Medical*, March, 1900) has found that leucocytosis is very rare in intestinal disorders. In chronic affections there is usually a hypoleucocytosis.

Tuberculosis in Infants.

Combe (*Arch. de Med. d. Enf.*, Vol. I, No. 5) divides the clinical forms of tuberculosis in infancy into three varieties—apyrexial tuberculosis, febrile tuberculosis, and pulmonary phthisis. The first variety runs the course of an infantile atrophy with symptoms of emaciation and loose stools. In the second variety, the fever is high, the prostration great, and the disease simulates pneumonia, meningitis, and typhoid fever. The third variety resembles that of adults very closely.

The Digestive Power of the Stomach.

Bauer and Deutsch (*Jahrb. f. Kinderhkde.*, 1899) report the results of a series of investigations which was undertaken to determine the strength of the gastric digestion in infants. The stomach having been carefully washed, food was given and the contents withdrawn after a certain interval and examined. It was found that in healthy infants an excess of lactic acid exists at the beginning of digestion. Hydrochloric acid was found toward the end of digestion. In gastro-intestinal affections, free hydrochloric was not found, but lactic acid, butyric acid, and even acetic acid existed in notable quantities. The same changes are found in fevers. Motor insufficiency is found in all fevers and gastro intestinal derangements.

ZAHORSKY.

SURGERY.

Carcinoma Under the Age of Thirty.

Cumston (*Boston Medical and Surgical Journal*, November 2, 1889) shows that carcinoma, though usually an affliction of middle life, is frequently met at an earlier period. Leopold saw cancer of the ovary at twelve; Schrader found carcinoma uteri in a woman of twenty-one. Carcinoma of the breast has been repeatedly observed between the ages of twenty and thirty. Cases of cancer of the testicle have been reported in patients under five. Many authors have seen the stomach affected between the ages of twenty and thirty. The skin and kidney have further been the seat of cancerous growth at this same early age. Cumston saw in his own practice a cancer of the liver at nineteen, one of the uterus at thirty-eight, and one of the ascending colon at twenty-four. Of equal interest with anything in the statistics quoted by Cumston is an adeno-carcinoma of the colon ascendens successfully removed in St. Louis by Witherspoon. The patient in that instance was only twenty-one.

A Unique Case of Double Inguinal Hernia.

Eckley and Davison (*The Chicago Clinic*, No. 10, 1899) report a case which was truly remarkable, as far as extent is concerned. The penis was buried at a depth of two inches and compressed by the masses on either side. After death of the patient a dissection of both herniæ was made and seven handsome cuts of the same serve to illustrate the article. Almost all the large and small intestines were found in the sacs, death having resulted from angulation of the colon with consequent obstruction.

The Use of Oxygen in Surgery.

M. Thiriar (*Bulletin de l'Académie Royale de Médecine de Belgique*, No. 10, 1900) produces his oxygen by electrolysis of water. Through a tube he injects the gas into cavities or through a needle into the tissues themselves. He claims to have cured two cases of malignant edema but accomplished nothing in tetanus; good effects followed the treatment in malignant postule and erysipelas, but the activity of the tubercle bacillus was simply augmented. A really

remarkable effect followed the use of oxygen in ordinary suppurations, while in anthrax a cure was brought about. The author considers it a superior antiseptic to any other in use, besides being free from all toxic properties.

Amputation of the Penis.

H. Lucas (*Centralblatt f. Chirurgie*, No. 1, 1900) divides the urethra and corpora cavernosa in such a manner that the former projects three or four centimeters beyond the latter. The exposed ends of the corpora cavernosa are covered by uniting the divided tunica albuginea over them, then the edge of the skin wound is sutured to the side of the urethra and at a distance of 2 cm. from its extremity. In no case so treated has stricture at the urethral outlet occurred.

On the Detection of Calculi in the Liver and Gall-Bladder.

Carl Beck (*New York Medical Journal*, January 20, 1900) succeeded in obtaining Roentgen photographs of stones in the liver, cystic duct and gall-bladder. He argues in view of this feat that fewer stones would be left after the operation and in consequence recurrence be less frequent if more common use were made of this aid to diagnosis.

Spinal Fracture—Paraplegia.

Robert Abbe (*Medical Record*, January 20, 1900) demonstrates radiographs which show fractures and dislocations of the spinal vertebræ. In none of these is the deformity great; the patients concerned have been the subjects of injury and instant paraplegia, but in each case the dislocation was spontaneously corrected, and the cord having been simply contused, but not crushed, the symptoms gradually disappeared.

The author is in favor of operation in these cases where meningeal irritation can be lessened even if the relief of pressure does in most instances not result in improvement of the functions affected.

A Case of Perforating Gastric Ulcer—Operation—Recovery.

F. B. Lund (*Boston Medical and Surgical Journal*, January 13, 1900), in an interesting article relates the history of a case in which he

operated 16 hours after the perforation took place. The ulcer was deeply folded in and covered with Lembert sutures, the abdomen being washed out and drained, and the patient made a good recovery. Operation in these cases should be done at once, as statistics show that over 80 per cent recover if the work be done within 12 hours.

Tubercular Osteo-Arthritis.

Eugene St. Jacques (*L'Union Medicale de Canada*, February, 1900) says it is a mistake to resect joints in the young. Among conservative therapeutic measures that of Bier can be said at least to give relief from pain, while arterial hyperemia produced by alcohol compress has in certain cases been of avail. Washing out the joint and subsequent compression have also given good results. Koenig did a simple synovectomy in eight cases, of which seven made a complete recovery. Resection is to be performed only as a last resort and then in adults alone, where we are willing to sacrifice something of length in order to gain a great deal in motility.

An Improved Operation for Appendicitis in the Acute Stage or for Quiescent Cases with Complications.

Robert F. Weir (*Medical News*, February 17, 1900) warmly commends the procedure, first mentioned by McBurney, of dividing skin, aponeurosis of external oblique, transversalis fascia and peritoneum with the knife, continuing the division of muscular tissue to blunt separation of the fibers in the longitudinal direction. Weir has extended the use of this method to operations on other parts of the abdomen and with universal success, finding that the separated muscle fibers approach one another later and leave an almost intact abdominal wall.

BARTLETT.

The Boer Army Surgeons.—It is stated that two-thirds of the surgeons in the Boer army are either Germans, or Afrikanders educated in Germany. Two of the Germans, Drs. Hohls and Coster, have been killed while assisting the wounded on the battlefield

MISCELLANY.

PROPOSED MEDICAL LEGISLATION.

At the last meeting of the Missouri State Medical Association a committee known as the Committee on Medical Legislation was appointed for the purpose of co-operating with the State Legislature in the revision of the laws regulating the practice of medicine in its various departments in this State. This committee is composed of the President of the Missouri State Medical Association and one member from each Congressional District; an additional number of about fifteen selected at large serve with this committee in an advisory capacity. As a result of its labor the following bills regulating the practice of medicine, surgery, midwifery, etc., and creating a State Board of Health have been formulated. These will be reported by the committee to the Missouri State Medical Association at its next meeting for revision, if necessary, and adoption, after which they will be recommended in due season to the Legislature where efforts will be made to secure their enactment.

An Act to Regulate the Practice of Medicine, Surgery, and Midwifery, and to Prohibit Treating the Sick and Afflicted Without a License, and to Provide Penalties for the Violation Thereof.

Be it enacted by the General Assembly of the State of Missouri, as follows:

SECTION 1. It shall be unlawful for any person not now a registered physician within the meaning of the law to practice medicine or surgery in any of its departments, or to profess to cure and attempt to treat the sick and others afflicted with bodily or mental infirmities, or engage in the practice of midwifery in the State of Missouri, except as hereinafter provided.

SECTION 2. The State Board of Health shall have general super-

vision over the registration of all practitioners of medicine, surgery, and midwifery in this State.

SECTION 3. All persons desiring to practice medicine or surgery in this State, or to treat the sick or afflicted, as provided in Section 1 of this act, shall appear before the State Board of Health at such time and place as the Board may direct, and shall there be examined as to their fitness to engage in such practice. All persons appearing for examination shall make application in writing to the Secretary of said Board, and shall furnish satisfactory written evidence of their qualifications, or shall pass a satisfactory written or oral examination in the presence of said Board, in English grammar and composition, arithmetic, United States history and geography, and shall also furnish evidence of good moral character. The medical examination may be made in whole or in part in writing, and shall be of an elementary and practical character, but sufficiently strict to test the qualifications of the candidate as a practitioner, and shall embrace the subjects of anatomy, chemistry, physiology, pathology, materia medica and therapeutics, obstetrics, gynecology, surgery, practice of medicine, medical jurisprudence, and hygiene, and such other branches as the State Board may direct. The candidate shall be required to answer 75 per cent. of such questions as are asked him before being granted a certificate; provided, however, that the examination of any applicant in materia medica and therapeutics shall be conducted by the member or members of said Board who represent the system of medicine of which such applicant has been a student. The Board of Health shall issue to such persons as they shall find upon such examination to possess the requisite qualifications a license to practice medicine and surgery in accordance with the provisions of this act, and the State Board of Health shall not be permitted to inquire the source of information of any applicant for license to practice medicine and surgery, but shall subject all applicants to the same examination and require of all the same degree of proficiency.

SECTION 4. Every person holding a license from the State Board of Health shall have it recorded in the office of the county clerk of the county in which he resides, and the record shall be endorsed thereon. And the clerk is authorized to charge a fee of one dollar for recording each license, to be paid by the person offering such license for record. Any person removing to another county to practice medicine or surgery shall have his license recorded in the county to which he removes, and the holder of said license shall pay said clerk of said county the usual fee for making the record. The county clerk shall keep in a book provided for that purpose a complete list of the licenses recorded

by him with the date of issue. The register of the county clerk shall be open for the public inspection during business hours and said licenses shall always be displayed in a conspicuous place. Any person neglecting for twenty days to record his license as in this Section provided shall be guilty of a misdemeanor and on conviction thereof shall be fined not less than ten dollars nor more than fifty dollars, and on failure to record said license for thirty days after such conviction, such person shall be liable to a fine not less than one hundred dollars.

SECTION 5. Any person except physicians now registered practicing medicine or surgery in this State, and any person attempting to treat the sick or others afflicted with bodily or mental infirmities without first obtaining a license from the State Board of Health, as provided in this act, shall be deemed guilty of a misdemeanor and punished by a fine of not less than fifty dollars nor more than five hundred dollars, or by imprisonment in the county jail for a period of not less than thirty days nor more than a period of three hundred and sixty-five days, or by both such fine and imprisonment for each and every offense, and treating each patient shall be regarded as a separate offense. Any person filing or attempting to file as his own a license of another or a forged affidavit of identification shall be guilty of a felony, and, upon conviction thereof, shall be subject to such fine and imprisonment as are made and provided by statutes of this State for the crime of forgery in the second degree. Said fines to be turned into the State treasury.

SECTION 6. In order to provide the means to carry out and maintain the provisions of this act, the said Board shall charge each person applying to and appearing before it for examination for a license to practice medicine and surgery a fee of fifteen dollars, and should such examination prove unsatisfactory and the said Board refuse to issue a license thereon, the applicant failing to pass such examination may return at any meeting within the next twelve months thereafter and be examined without extra charge, but no temporary license shall be issued to such person. All fees so received from applicants for licenses shall be paid into the State treasury and shall be held by the State treasurer as a separate fund to be disbursed only on the certificate of the President and Secretary of the Board of Health in payment of expenses of maintaining said Board of Health.

SECTION 7. The Board may refuse license to individuals guilty of unprofessional or dishonorable conduct, and they may revoke license for like cause after giving the accused an opportunity to be heard in defense before the Board. Habitual drunkenness or excessive use of narcotics, or producing criminal abortion shall be deemed unprofessional and dishonorable conduct within the meaning of this section,

but this specification is not intended to exclude all other acts for which licenses may be revoked.

SECTION 8. Whenever in this act it is provided that any duty or service shall be performed by any county clerk, such duty and service in the City of St. Louis shall be performed by the Health Commissioner as if said officer was specially named to perform those duties and services, and said officer shall receive the same compensation therefor as this act provides shall be paid to the county clerk; provided further, that whenever in this act the word county is used it shall include the City of St. Louis the same as if said city were specially named.

SECTION 9. It is not intended by this act to prohibit gratuitous services to and treatment of the afflicted in cases of emergency; and this act shall not apply to commissioned surgeons of the United States Army, Navy, and Marine Hospital Service.

SECTION 10. It shall be unlawful for any person to practice midwifery in this State before receiving a license to do so. Every person desiring to practice midwifery shall make application to the State Board of Health for examination and pay a fee of five dollars. And upon passing an examination satisfactory to said Board upon the subject of obstetrics shall receive a license to practice as above provided. It shall be unlawful for any person licensed as midwife to engage in any other branch of medical practice or to advertise herself as doctor, doctress, or physician, or to use any letters before or after her name on a sign or otherwise indicating that she is authorized to or does engage in any other branch of medical practice. Any person practicing midwifery or advertising herself as midwife without first obtaining the license aforesaid, and any licensed midwife who shall do any acts in this Section prohibited, shall be deemed guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than ten dollars nor more than fifty dollars or by imprisonment in the county jail not more than two months nor less than ten days. Acting in each case shall be deemed a separate offense.

SECTION 11. It shall be the duty of the several prosecuting attorneys in this State to prosecute all violations of this act. If any prosecuting attorney should refuse to prosecute when information is furnished to him that this act has been violated in his county, such prosecuting attorney may be proceeded against and arrested on the affidavits of any private citizen, charging such neglect of official duty, and when arrested it shall be the duty of the Attorney-General of this State to file information and prosecute the same against such prosecuting attorney, and upon conviction such prosecuting attorney shall *ipso facto* forfeit his office.

SECTION 12. Article of Chapter, Revised Statutes of 1899, and all acts and parts of acts inconsistent with this act are hereby repealed.

An Act Creating a State Board of Health, and Repealing Chapter of the Revised Statutes of 1899.

Be it enacted by the General Assembly of the State of Missouri, as follows :

SECTION 1. The Governor, by and with the consent of the Senate, shall appoint seven reputable physicians, who shall constitute a Board which shall be styled "The State Board of Health of Missouri." The members so appointed shall hold their office for a term of four years or until their successors are appointed and qualified: Provided, however, that in the first appointment under this act three members shall hold for two years and four members for four years and thereafter all appointments shall be for four years. All vacancies occurring in the Board shall be filled by the Governor, and when made when the Senate is not in session shall be subject to confirmation at the next ensuing session of the Senate.

SECTION 2. The Board of Health hereby created shall be a body corporate under the name of "The State Board of Health of Missouri," and by that name may sue and be sued, adopt a seal and perform such other acts as are usually performed by public corporations, including the adoption of by-laws, not in conflict with this act and the general laws of this State.

SECTION 3. It shall be the duty of the State Board of Health to appoint two legally qualified physicians in each and every county in this State, who together with the County School Commissioner and Presiding Judge of the County Court, the last two named to be ex-officio members, shall constitute a local Board of Health, such local Board shall be known as the "—— County Board of Health," naming the county in which they are appointed to act. The members of the local Board shall be Commissioned by the President and Secretary of the State Board and the members who are physicians shall hold office for four years: Provided that in the first appointment, one of the said physicians shall hold for two years, the other for four years. The various local Boards so appointed shall organize by the election of a Chairman and Secretary from their members. The county Board shall meet at least twice in each year and shall make report to the State Board whenever any contagious or infectious disease prevails in or threatens their respective counties. The members of the local Board

shall receive no compensation for their services unless they are called on to act by the State Board in times of epidemics or threatened epidemics, and then they shall receive such compensation as shall be deemed reasonable by the State Board. When called on to act by the State Board under such circumstances the local Board shall possess and exercise the same powers in regard to quarantining as are hereby conferred on the State Board of Health, and may enforce all rules and regulations of the State Board in that respect.

SECTION 4. The members appointed on the State Board shall be physicians in good standing, of recognized professional and scientific knowledge, and graduates of reputable medical schools, and they shall have been residents of the State for at least five years next preceding their appointment: provided, that in the appointment made there shall be no discrimination made against the different schools of medicine that are recognized as reputable by the laws of the State; and provided further, that no more than three of the members so appointed shall be connected professionally with any medical college; neither shall more than four of the members so appointed belong to the same political party.

SECTION 5. The State Board of Health shall have general supervision over the health and sanitary interests of the citizens of the State. It shall be their duty to recommend to the General Assembly of the State such laws as they deem necessary to improve and advance the sanitary condition of the State; to recommend to the municipal authority of any city, public schools, or to the county court of any county, the adoption of any rules that they may deem wise or expedient for the protection and preservation of the health of the citizens thereof.

SECTION 6. Whenever the State Board of Health shall be satisfied that any malignant, contagious or infectious disease exists in any city, district or part of the country to such an extent as to endanger the lives of the inhabitants of any part of the State of Missouri having direct communication with such infected city, district or part of the country, said Board shall have power, by a majority vote and consent of the Governor, to establish quarantine regulations against such infected city or district, and may determine and regulate to what extent and by whom any communication or business transaction with such infected city or district may be had, and establish such rules and regulations as may be deemed necessary to prevent the introduction and spread of the disease; said Board is hereby empowered to call upon any executive officer of the State to enforce such rules and regulations, and it shall be the duty of all public officers, sheriffs and constables

and other executive officers of the State to assist the State Board of Health to carry out the provisions of this act. Said Board is also empowered to appoint a State Bacteriologist and Pathologist, and to define his duties and compensation.

SECTION 7. Whenever the State Board of Health shall declare that any malignant, infectious or contagious disease is epidemic in any portion of the country or the State of Missouri, they shall immediately, or as soon thereafter as possible, give notice to that effect to the citizens of the State, and also give public notice of the rules and regulations adopted by them for the enforcement of quarantine in infected and other districts, and to take such steps and adopt such measures as they deem necessary to prevent the introduction of such disease.

SECTION 8. Any person or persons failing, after notice, or refusing to comply with the quarantine rules and regulations of the State of Missouri, as established by the State Board of Health, or any person or persons resisting by force the enforcement of the quarantine regulations of the State of Missouri, established and approved as aforesaid, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be fined not less than ten nor more than five hundred dollars for each offense.

SECTION 9. The meetings of the State Board shall be in April and October of each year, and at such other times as the Board shall deem expedient. The meeting in April of each year shall be held in the City of Jefferson, and four members shall constitute a quorum. They shall choose from their number a President, Vice President and a Secretary, and they may adopt rules and by-laws for their government.

SECTION 10. The Secretary shall perform such duties as may be prescribed by the Board and this act; he shall receive a salary which shall be fixed by the Board; he shall also receive his traveling and other expenses in the performance of his official duties. The members shall receive as compensation for their services the sum of ten dollars per day and actual expenses for attendance at the regular semi-annual meetings. The members shall also be allowed their actual expenses when traveling in the performance of the business of and at the direction of the Board. All sums herein provided to be paid, including the salary of the Secretary, shall be paid out of the appropriation that may be made by the Legislature on presentation to the State Auditor of the certificate of the President of the Board of Health.

SECTION 11. The State Board of Health shall organize within thirty days after the appointment of the members thereof. The Pres-

ident of the Board shall have authority to administer oaths, and the Board shall have authority to take testimony in all matters relating to their duties and powers. In selecting places to hold their meetings they shall, as far as possible accommodate the different sections of the State, and due notice shall be published of their stated and called meetings. All certificates issued by them shall be signed by at least five members of the Board.

SECTION 12. It shall be the duty of the Board of Health to make an annual report, through their Secretary, or otherwise, in writing to the Governor of this State, on or before the first of January of each year, and such report shall include so much of the proceedings of the Board, and such information concerning vital and mortuary statistics, such knowledge respecting disease, and such instruction on the subject of hygiene as may be thought useful by the Board for dissemination among the people, with such suggestions as to legislative action as they may deem proper.

SECTION 13. All fees collected by the State Board of Health under any law of this State shall be paid into the State Treasury.

SECTION 14 Chapter of the Revised Statutes of 1899 is hereby repealed.

Trustees Liable for Physicians' Services.—A case in New York State has recently attracted attention in the courts because of the effort of a physician to obtain remuneration for his services, first from the patient, and subsequently from the trustees of the latter individual. The patient was a man who was accustomed to have periodical debauches, and who had not, for this reason, been allowed to receive directly a share in his father's estate. The father's will, by its terms, had made the other sons trustees of the estate, and had provided that they should so invest the money as to obtain sufficient income for the support of the unfortunate and irresponsible son. The physician who attended the latter did so with the knowledge and acquiescence of at least one of the trustees, and these trustees had in their possession unexpended income with which they could, if they chose, pay the physician for his services. They having refused to do this, suit was brought against the patient and a judgment obtained, but it was returned unsatisfied. The physician then brought suit against the trustees, with the result that the complaint was dismissed on the first trial, but in the Fourth Appellate Division, this decision was reversed, Justice Spring holding that the trustees were liable.

BOOK REVIEWS.

An Atlas of the Bacteria Pathogenic in Man. With Descriptions of Their Morphology and Modes of microscopic Examination. By SAM'L G. SHATTOCK, F.R.C.S., Joint Lecturer in Pathology and Bacteriology, St. Thomas' Medical School, London; Pathological Curator in the Museum of the Royal College of Surgeons, London. With an introductory chapter on Bacteriology—Its Practical Value to the General Practitioner, by W. WAYNE BABCOCK, M.D., Pathologist to the Kensington Hospital for Women; Clinical Pathologist to the Medico Chirurgical Hospital; Demonstrator of Pathology and Bacteriology in the Medico-Chirurgical College of Philadelphia. Sixteen full page colored plates. 1899. Price, Cloth, \$1.00. [E. B. Treat & Co., Publishers, New York.]

The general practitioner, who does not have the time to pursue the study of bacteriology in its relations to the various diseases, will find in this little volume a most excellent and complete exposition of the bacteria commonly met with. The plates are well made and afford a correct interpretation of the form and appearance of the various germs, and the book contains also a concise but complete description of the method of their preparation for examination. It is one of the most practical little books that has appeared on the subject of bacteriology.

Gould's Pocket Medical Dictionary. Fourth Edition, Revised and Enlarged (30,000 words), giving Pronunciations, Definitions of the principal words used in Medicine and the Collateral Sciences. By GEORGE M. GOULD, A.M., M.D. Bound in Morocco, Gilt Edges. Price, \$1.00. [P. Blakiston's Son & Co., Publishers, Philadelphia, Pa.]

This little volume is one of the best pocket medical dictionaries that has come into our hands, and the price places it within the reach of all. It is handsomely and durably bound and easily carried in the pocket. In addition to the 30,000 words, it contains complete tables of Eponymic Terms, of the Arteries, Muscles, Nerves, Bacteria, Bacilli, Micrococci, Spirilla; Thermometric Scales, and a dose list of Drugs and their preparation in both the metric system of weights and measures.

NOTES AND ITEMS.

Dr. Geo. F. Butler, of Chicago, has been elected to the Superintendency of the Alma Sanitarium at Alma, Mich.

A Homeopathic Hospital.—The Board of Directors of the Homeopathic Hospital Association has decided to abandon the old building at 2719 Chestnut Street, in this city, and to erect a new one for hospital purposes as soon as the necessary funds can be secured.

The Bubonic Plague.—The excitement caused in San Francisco by the discovery of several cases of bubonic plague in that city has subsided. Three Chinamen are said to have died of the disease. Steps were taken to prevent the further spread of the disease when it first appeared. Many inspectors, both lay and medical, were appointed, and the Chinese quarters have been thoroughly inspected and disinfected. The quarantine against that section of the city has been lifted and its inhabitants are allowed the liberty of the rest of the city as before.

The Western Ophthalmologic and Oto-Laryngologic Association, at its fifth annual meeting held in St. Louis, April 5-7, 1900, elected the following officers: President, M. A. Goldstein, M.D., St. Louis, Mo.; First Vice-President, H. V. Würdemann, M.D., Milwaukee, Wis.; Second Vice-President, C. R. Holmes, M.D., Cincinnati, Ohio; Third Vice-President, F. C. Ewing, M.D., St. Louis, Mo.; Secretary, W. L. Ballenger, M.D., Chicago, Ill.; Treasurer, W. L. Dayton, M.D.; Lincoln, Neb. The next meeting will be held in Cincinnati, Ohio.

The Decision in the Baking Powder Case.—A decision has been rendered by the presiding judge in the legal contest between baking powder manufacturers to which editorial reference was recently made. The defendant was charged with violating the pure food law which prohibits the use of alum in any product intended to be used in the preparation of food. The defense attempted to prove that the law was unconstitutional.

Judge Clark imposed the minimum fine of one hundred dollars. At the same time he rendered a lengthy opinion in which he reviewed the whole case, stating that he believed it to be an iniquitous law, but that was a matter for the consideration of the Legislature and not for a trial judge. In summing up the case, he said he had listened intently to

the evidence of the experts for the prosecution that alum baking powder left a residue in bread which was deleterious to health, but the fact that none of them on cross-examination could cite a single instance where it had caused a physical ailment, stood like a stone wall against all their theories.

Physicians Must Pay Taxes.—The Mississippi State Legislature recently passed a bill imposing the following annual graduated tax upon physicians practicing in that State: Physicians practicing in towns of 3,000 or more inhabitants, \$10.00; in towns of less than 3,000, \$5 00; in country districts, \$2.50. Heretofore physicians have never paid taxes in this State.

Guarding Against Epidemics.—Secretary Gage has submitted to the House a request for \$200,000 additional to the fund to prevent the introduction and spread of epidemic diseases. He says that the Surgeon-General of the Marine Hospital Service reports that on account of the continued and increasing danger from plague, medical officers have been stationed at United States consulates in Europe from which emigrants depart. Medical officers also have been stationed at the fruit ports of Central and South America to guard against yellow fever. The consulates at Yokohama, Kobe, and Hong-Kong also have medical officers.

Secretary Gage, continuing, says: "The Surgeon-General further states that plague has recently been reported at San Francisco, and that the early recrudescence of yellow fever in Florida and other Southern States is seriously apprehended. To meet this the Secretary asks for \$200,000 in addition to the \$300,000 heretofore given, and he requests that it be made immediately available, since the appropriation is almost exhausted and should yellow fever appear during the month of June a deficit would be unavoidable."

Missouri State Medical Association.—The forty-third annual meeting of the Missouri State Medical Association will be held in Mexico, Mo., May 15, 16 and 17, 1900. The following papers have thus far been promised:

- E. L. Priest, Nevada.—State Medicine.
- P. S. Fulkerson, Lexington.—Diphtheria.
- E. E. Parrish, Memphis.—Hystero-Epilepsy.
- Carl Barck, St. Louis.—Intra-Ocular Tumors.
- C. R. Day, Mayview.—Quackery vs. Medical Ethics.
- F. J. Lutz, St. Louis.—Report on Abdominal Surgery.

J. C. Crist, Lexington —Acute Inversion of the Uterus.

E. Van Note, Kansas City —The State's Greatest Crime.

R. S. Kelso, Joplin.—Small-Pox; Its prevention and Treatment.

J. L. Short, Kansas City —Entropium and Its Rational Treatment.

John Punton, Kansas City.—Hysteria and Its Protean Manifestations.

William Frick, Kansas City. — Some Observations on Secondary Syphilis.

A. H. Ohmann-Dumesnil, St. Louis.—Two Cases of Chancre of the Groin.

J. K. Bauduy, St. Louis.—A Case of Secondary Carcinomatous Spondylitis.

C. A. Dannaker, Kansas City.—Are Obstetrical Emergencies Fully Anticipated.

Pinkney French, St. Louis.—Modern Pathology and Treatment of Appendicitis.

C. H. Wallace, St. Joseph.—Treatment of Hernia by the Marcy-Bassini Operation.

O. P. Kernodle, Sedalia.—Recent Improvements and Discoveries in the Science of Alimentation.

H. W. Loeb, St. Louis.—Limitations of the Laryngologist in the General Treatment of Nose and Throat Diseases.

A Symposium on Gall-Stones will be a feature of the meeting, which will include the following: Physiology of the Bile, C. Shattinger, St. Louis; Pathology of the Gall-Stones, H. Summa, St. Louis; Etiology and Diagnosis, W. G. Moore, St. Louis; Medical Treatment, C. F. Wainwright, Kansas City; Surgical Treatment, A. V. L. Brokaw, St. Louis.

In addition the following have promised to contribute: Drs. W. S. Alee, Olean; L. W. Dallas, Hunnewell; J. W. Allen, Liberty; John Young Brown, St. Louis; J. F. Campbell, Calleo; O. B. Campbell, St. Joseph; R. M. Funkhouser, St. Louis; Hal Foster, Kansas City; C. Lester Hall, Kansas City; L. I. Jones, Linden; J. Ellis Jennings, St. Louis; W. F. Kuhn, Kansas City; W. P. King, Kansas City; E. W. Schaufflen, Kansas City.

Arrangements have been made for an exhibit of pathologic specimens. Those who have appropriate specimens that are available are requested to notify the Committee at once.

A. R. KIEFFER, M.D., Chairman, (4268 West Belle Place),

H. W. LOEB, M.D., (3559 Olive Street),

H. C. SHUTTEE, M.D., (West Plains),

Committee on Scientific Communications.

ST. LOUIS
COURIER OF MEDICINE.

VOL. XXII.

MAY, 1900.

No. 5.

ORIGINAL CONTRIBUTIONS.

**Mechanical and Surgical Problems in the
Paralyses of Children.**

BY VIRGIL P. GIBNEY, M.D., LL.D.,

NEW YORK CITY.

Read before the Hartford Medical Society, April 2, 1900.

WHILE on a visit to the Hospital for the Ruptured and Crippled, during the winter, your Secretary approached me in so courteous a manner that I found myself yielding rapidly to a temptation which accounts for my presence on this occasion.

I found myself at a loss for a title, because it is difficult for one whose daily work is confined to a narrow specialty, to find a topic that will interest the professional public.

It finally occurred to me that every medical man is interested in the paralyses of children. There is a degree of helplessness on the part of the practitioner as well as the patient. One prescribes electricity and massage, and active and passive movements, and feels all the while that there is very little in the way of permanent good result to promise. In the face of all such measures, he finds the limb wasting, the joints getting unstable, and as the bodily weight of the child increases, the helplessness becoming more marked.

Early in my professional career, I was led to believe that all of these paralyzes eventually recovered. I got a vague idea of the term "recovery." I recall now, case after case, of what was then called infantile paralysis, dental paralysis, spinal paralysis, where, as assistant, my instructions were to hold out good results in the end, and years afterward the patients, themselves, upbraided me for the rosy prognoses I had made. In the wards of the hospital I fairly grew up with the patients. I applied static electricity, faradism, and galvanism day after day, week after week, year after year. As the little tot would enter the hospital, I would take it by the hand and try to teach it how to walk, and would often get a child with a dangle leg to balance itself, and then flatter myself that improvement was unmistakable. Later, this same little tot would walk with a little less disability under the influence of mechanical appliances, and when this tot ceased to be a tot, and approached manhood or womanhood, the difficulty in walking would often be painful. Short distances and over comparatively smooth surfaces could be managed, but the ordinary walking that people are called to do, was something out of the question, and then I wondered if I had not been altogether wrong in my predictions. I grew pessimistic, and my neurological friends would chide me sometimes for gloomy prognoses.

It is hard, to-day, to hold out encouragement to the parents of these little ones who have such faith in the possibilities of electricity. It has always seemed strange to me that so powerful an agent could not work the wonders in disease that it does in commerce and the arts. When one considers the ease with which carloads of people are borne with speed over hills that sometimes look like mountains, when one considers the brilliant illumination of cities, of public halls and dwelling houses, one can not help making odious comparisons when so little progress is made in the electrical treatment of paralyzes.

The title, therefore, chosen, was "Mechanical and Surgical Problems in the Paralysis of Children," and I propose to suggest, at least, some points for discussion, and to make you familiar, as far as I am able, with the solution of some of these problems.

The paralyzes in children are: Cerebral, spinal, and peripheral. The cerebral may be regarded for all practical purposes, as permanent. The spinal paralyzes are often permanent, yet the extent and the duration often depends upon the cause. The peripheral paralyzes are usually self-limited, and respond sooner or later to treatment, and complete recoveries do occur. It behooves one, therefore, to become a good diagnostician, so that proper differentiations can be made with a fair degree of accuracy.

One of the problems in the early stage of a paralysis is, what shall be done with the muscles? Is it better to encourage a weakened muscle to activity, or is it better to enjoin rest? The first impulse on the part of the mother when she finds a palsied limb in the morning, after a restless night, is to have the child use the limb. She stands it up and tries to make it move the limb, notwithstanding the parts are very sensitive. The doctor, on the first visit, is not quite sure whether it is an ephemeral paralysis, or one of graver import, and he does not always make a diagnosis. If he does, he is not quite sure of his opinion. He lacks the courage of conviction, and the gravity of the situation is not fully appreciated. It is generally well known to practitioners that the lesion in an infantile paralysis is a polio-myelitis anterior, acute. It is therefore incumbent upon him to be sufficiently conversant with the functions of nerves and muscles to be able to locate the part of the spinal cord where the inflammation is most active. He should note that the process involves the thickness of the cord at first, and that the prognosis will depend largely upon the extent and the persistency of the lesion. A very sharp attack accompanied by complete prostration of all the muscles of the lower extremity is usually of short duration, and many of the ganglion cells may escape destruction. A familiarity with the anatomy of the cord and with the functions of the cells will prompt him to subdue, as quickly as possible, this inflammatory process.

To note the recovery of a muscle or group of muscles during the first few months is exceedingly interesting. One naturally finds oneself discussing or theorizing as to the viability of certain cells, and he can predict often the restoration of muscles. Now, as to the problem, it has always seemed to

me an excellent thing to enjoin quiet and rest for the muscles and joints, to keep the parts warm, and to avoid any active or passive movements, because one never knows just how much damage will be done the cells by the inflammatory process. It is poor practice, in my judgment, to encourage the child to use the limb, to insist on the mother having active movements kept up during the day. It is seldom that an orthopedic surgeon has an opportunity of observing a case in these early stages. On a few occasions it has been my good fortune to see a child the day following the attack, and my treatment is always pretty brisk counter-irritation to the spinal column with absolute rest to the lower extremities. Within a few days afterward, if I find the mother or attendant too anxious about the use of the limbs, I apply a small splint or apparatus which will keep the parts quiet. The time for electricity and massage is at a later period. In the cerebral paralyzes of children, I am sure, like principles should prevail. This is always true of the peripheral paralyzes. In other words, it is a recognized principle among surgeons who have to do with these mechanical and surgical problems, to avoid in the inflammatory stage stimulation of the muscles, to maintain the joints in normal positions, and thus avoid laxity of ligaments about the joints whose muscular support is impaired.

It will be seen, therefore, that a grave responsibility rests upon the family practitioner, and this responsibility calls for prompt and early diagnosis.

An important problem which is often difficult of solution is, how soon shall joints in a palsied limb be protected? During the year following a polio-myelitis, the neurologist, as a rule, objects to apparatus. Within a comparatively short period I have heard this question discussed in the Academy of Medicine, and have heard shining lights in pediatrics and in neurology approach the question from every side. The conclusion reached by these eminent gentlemen was, that improvement in muscular development was likely to occur, or would occur, during the first twelve months, and that no impediment should be offered to the free use of the muscles. It was also implied that apparatus should not be employed, and that the orthopedic surgeon who insisted on this was interested more in the

commercial aspects of the case than in the good of his patient. Personally, I believe that it is better to protect the joints from strain during the first year. A subluxation of the shoulder, or of the hip, or of the knee is an awkward condition to manage, and when a dislocation occurs the matter becomes infinitely more serious. This conviction has grown upon me while contending with the deformities. Take, for instance, a limb where the anterior tibial group is palsied, in the course of a few months—sometimes two or three years, the opposing group of muscles become very short, or, more properly speaking, the tendons become short, and one finds, therefore, an equinus. Again, where the posterior group is palsied, and the anterior group is left unimpaired, the anterior tendons shorten and an increasing deformity results. Again, where the anterior femoral muscles are palsied, the opposing muscles are often not involved, and we find deformity at the knee, and at the hip under similar conditions. It is well known that the final outcome of the polio myelitis is a paralysis confined to certain groups of muscles, and seldom symmetrical. The question has often been asked, why do these muscles shorten, and why does deformity occur? The question has long since been answered, by a knowledge of the behavior of muscles and tendons. Over-activity of a sound muscle causes increase in size of the same. The prolonged position of a tendon induces shortening, the absence of any counter-force contributes also to muscular shortening, and deformities varying from a slight equinus to extraordinary dislocations of knee and hip are seen in many instances. Time and again I have seen a slight equinus, or a moderate degree of equinus, with a fair degree of power in the anterior tibial group. These muscles have been examined latterly by competent men, and report given that they were practically useless. The prognosis has been bad. The division of the tendon and the restoration of the foot to a position of over-correction has resulted in an enormous gain of power in the anterior tibials. Muscles that would not act to the faradic current have, long since, reacted well. The use of the foot has been greatly improved. What has taken place—is this: The anterior tibial muscles being partially paralyzed, that is, the common extensors to a slight degree, the anterior tibials per-

haps to a still less (certain fibers in these muscles being completely palsied); the gastrocnemius group has gained the ascendancy, the tendo Achillis has shortened, and the patient walked with the foot extended. The foot so rests in this position at night, and the evolution of the deformity is easily understood. When, by a simple operation, these slightly paralyzed muscles are put in better position, and the strain removed, improvement rapidly follows.

For the past two or three years I have been treating calcaneus in young children by hyper-extending the foot, maintaining it in plaster-of-Paris continuously for from eight to twelve months. I have thus opposed this contraction of the anterior tibials, have put at rest the palsied gastrocnemius, and the tendo-achillis has shortened unmistakably.

A few days since, I operated on a child some five or six years of age, for the relief of a paralysis of the anterior tibial group. This child, two years ago, had a marked calcaneus and the tendo Achillis was very long. I put the foot, at that time, in pure equinus, that is, fully extended, and plaster-of-Paris was worn continuously for eighteen months. It has been now nearly a year since the plaster was removed and the tendon has remained short. At the operation just referred to, I detached the flexor brevis pollicis, a portion of the anterior tibial tendon, and grafted these ends into the tendon of the palsied posterior tibial. I tried to extend the tendo Achillis by manual force, and it was exceedingly difficult to bring the foot to a right angle in dorso-flexion. Similar procedures have been employed for the relief of elongated tendons, hence I am more and more convinced of the value of early protection of a joint and the tendons and fibrous structures about a joint, believing, as I do, that lax joints will become less lax, and that the laxity of these tissues will not re-occur. This is why I advocate protective apparatus for a palsied limb, even where no deformity exists. It enables the child to walk on the limb, even though it be as a peg leg. It encourages the nutrition of the parts, the circulation is improved, and the little strength remaining in the groups of muscles paralyzed, or partially paralyzed, is not over-taxed. There is no reason why electricity and massage should not be continued with the apparatus,

and I am sure that I have saved many limbs from being dangle legs by the early use of apparatus.

This is a solution, in my opinion, therefore, of the mechanical problem above stated. It fortunately happens, in my own practice, that many of the patients coming to me for an opinion, come also with advise from the family physician, "to do what he says, and, if possible, to have him conduct the treatment throughout." In this way I do not shirk the responsibility, but I do dislike to divide responsibility, and be obliged to argue a question on which my views have become so firmly fixed by close observation and long experience.

Consequent upon paralysis, the deformities in the upper extremity are numerous and varied. We have a deformity of the shoulder often amounting to a dislocation. In the forearm and hand we have a drop-wrist, and occasionally a deformity of the elbow as a result of the shortening of the flexor group. In the lower extremity, the deformity at the hip is that of flexion, occasionally with abduction and less frequently with adduction. The tissues in front of the hip-joint, capsular ligament, the tensor vagina femoris, the fascia lata, the psoas and iliacus, take part in the production of the deformity. I have seen children whose gait was that of a kangaroo, walking on all fours, with their hips well in the air, and in whom it was impossible to extend the thighs.

A common deformity of the knee is flexion and abduction of thighs and a moderate degree of knock-knee. Common deformities of the feet are equinus, where the foot is fully extended; calcaneus, where the heel is very long and the foot is in marked dorso-flexion; valgus, where the muscles on the inner side of the leg and ankle are palsied; varus, just the reverse, and often a cavus, where the muscles about the feet are palsied and we have a sharp arch to the foot.

These deformities have long furnished difficult surgical problems, and many practitioners have hesitated to divide these muscles and tendons, preferring rather to stretch them, on the supposition that the power of the limb would be markedly diminished. They somehow feel that Nature has left these muscles and tendons for some wise purpose, and are loath to interfere. Then when the question of section becomes

a prominent one, they are unable to explain the reparative processes. They talk vaguely about the sheaths of tendons being left, about connective tissue forming between the severed ends, and are unwilling to commit themselves to a measure which promises relief, simply because a satisfactory explanation can not be made concerning repair. Some of the happiest children and happiest families it has been my good fortune to meet, have been in cases where deformity at the hips occurred, and where the gait was quadrupedal. I have freely divided all tissues down to the hip-joint, by the open method, and have brought the limbs perfectly straight, having the wounds heal primarily, caring little about the repair of the structures divided. With the assistance of apparatus these children have walked in the upright posture, have taken their place along with their species, and improvement has continued to an extraordinary degree.

The surgical problem, therefore, from my standpoint, is not how the tissues repair, but how the greatest amount of relief can be afforded. This seems to me paramount. It is good practice to relieve deformity by traction, if possible. Yet, if traction is painful and long-continued, then section—subcutaneous, or open, should be a favorable resort. The limbs, in my experience, are just as useful, muscles that have been stretched over joints have recovered tone, have developed, and wonders have been worked. It makes little difference whether it be at the hip, at the knee, or at the ankle. If one is afraid of subcutaneous work in these aseptic days, open methods can be employed and a competent surgeon need have no fear of injury to the vessels or nerves. Many of these milder deformities can be overcome by force, under an anesthetic, without resort to section, but it makes little difference which is employed, so the correction of deformity is made complete.

A surgical problem that now agitates the orthopedic as well as the neurological world is the various function of muscles. How can a palsied muscle be reinforced so that a portion of a healthy muscle may assume its function? For several years operations have been done in the solution of this very problem. Take, for instance, a paralyzed quadriceps femoris. A muscle which in outward relation acts as an extensor is fre-

quently left unaffected, and it will be noted that a child can partially extend the leg by first rotating the thigh outward. This effort brings into play the sartorius. An operation which is rather bloody, but very efficient, is the separation of the attachment of the distal end of the sartorius and grafting by suture of the end thus detached through a button-hole in the lower end of the tendon of the quadriceps femoris. I have done this operation several times and am pleased with the results. In a few instances I have witnessed the power of extension increased fully 50 per cent. The most brilliant work, however, is done about the ankle. Take, for instance, an extreme eversion of the foot, where the peroneal tendons are short and strong, where the posterior tibials are palsied and elongated. One of the peroneals can be grafted to the tendon of the posterior tibial, additional reinforcement can be had by taking some of the tendons of the common extensor or anterior tibial and inserting them along the inner side of the foot. Occasionally a strong tendo Achillis can be utilized.

Quite recently I had occasion to graft into the posterior tibial one-half of the tendo Achillis and one-half of the common extensor. At the same time the tendo Achillis, which was long, was shortened, and my prognosis is that this boy will be able to walk well and with scarcely a trace of deformity.

At present, in the hospital, ready for discharge we have a number of patients where similar operations have been done, and where apparatus has been discarded.

Drop Wrist.—One of the most noticeable advances in the correction of deformity and the restoration of the limb to usefulness, is the transplantation of tendons of the wrist and forearm.

The ordinary drop wrist, resulting from an infantile hemiplegia, or from a spastic hemiplegia, is relieved by the grafting of the flexor tendons to the extensor tendons. This is done in two ways. First, through an opening made in the interosseous space. Second, by carrying the tendon around the radius or ulna, according to circumstances. The results have been gratifying.

I have in mind now a case operated on at the hospital where the result was about perfect. In a few instances the

extensor tendons have been shortened by taking a loop in them, but the results here are not so good. It has seemed to me that the interosseus space could be better utilized if the opening made were sutured on either side so that the parts would not grow together again. This could be done very easily and the opening made patulous.

A surgical problem of more difficult solution is, what relief can be afforded to a limb where both anterior and posterior muscles are paralyzed—a typical dangle leg? Synostosis offers a solution. The knee can be resected, the articular surfaces of the astragalus and the malleoli can be removed and bony union secured. This operation at the joint is known as arthodesis. Occasionally, it is necessary to remove the astragalus where the paralysis is extreme, and where there is no support for the anterior portion of the foot.

It would be interesting, I am sure, to report cases in detail, but I have endeavored to merely outline some of the progress during the past decade.

There is much to be learned yet in the treatment of paralysis. Many mechanical and surgical problems are yet to be solved, and the solution is gradually coming to the front. The early recognition of the lesions producing paralysis, the management of the early stages, the conservatism of power, the protection of the fibrous structures about joints, the prevention of deformity, correction of deformity when it does occur, the vicarious functions of muscles, the ablation of joints in dangle legs, are points to which I most earnestly call your attention.

[16 Park Avenue.]

Crowded Professions in Cuba.—The Cuban cabinet has decided to adopt the recommendations of Señor Barreiro, secretary of public instruction, for the reorganization of the School of Engineers, in order that young men may be able to adopt some other profession than law and medicine, both of which are overcrowded. The Spaniards founded an engineering school, but when they found that the graduates were competing with Spanish engineers the school was neglected to such an extent that it became valueless. It will now be raised to a high standard of efficiency.

Leprosy; A Clinical Lecture.

By ISADORE DYER, PH.B. (YALE), M.D.,

NEW ORLEANS, LA.,

PROFESSOR OF DISEASES OF THE SKIN, AND SECRETARY OF THE NEW ORLEANS POLYCLINIC; LECTURER AND CLINICAL INSTRUCTOR ON DERMATOLOGY, MEDICAL DEPARTMENT TULANE UNIVERSITY; DERMATOLOGIST TO CHARITY HOSPITAL; EDITOR "NEW ORLEANS MEDICAL AND SURGICAL JOURNAL," ETC.

Delivered at the Charity Hospital before the Polyclinic Class.

THE patient you see is a negro, about 60 years of age, with rather striking appearance. The location of the eruption is general, particularly affecting the head, and the extremities. If we study the eruption in detail, we see that the face, the cheeks, nose, forehead, and ears are partially involved.

On the extremities, both hands, both feet, the arms and legs are involved. The arrangement of the individual parts of the eruption differs on the several parts affected. On the face, the eruption occurs in clusters and groups of lesions; while on the legs, arms, feet and hands, there is infiltration, marked hardening, fewer groups of lesions on the hands and feet, and both hands and feet show signs of loss of tissue. This is evidenced more especially on the hands, where, on both sides each digit has lost one or more phalanges.

The lesions on the face, and at other points where they are distinct, are tubercles, determined by their elevation and involvement of the deeper skin by their almost uniform size—that of a small marble.

In the alæ nasi, and running out on the cheeks, down on the lips, and over the chin, these lesions are particularly marked.

Noting a group of these, we see that each tubercle is shiny, more or less hard, some appearing waxy, but all having—even on the skin of so black a negro, a strong shade of reddish coloration.

Examining the forearms and hands, you notice the tense-

ness of the epidermis and the thickening of the entire skin, at no point edematous. The scarring here and there on the dorsi of the hands suggests, from the irregular outlines, pigmented borders, and white cicatricial centers that ulceration has taken place.



FIG. 1.—Mutilating Leprosy.

The deformity of both hands is striking; there is loss of mobility in the fingers, and the mutilation is suggestive of a trophic change. Close examination of the ends of the mutilated fingers show that the process of mutilation has been gradual, as only here and there is the loss of the outer skin evident. On nine out of the ten digits, you see that the last phalanx is gone, while in one—the third finger of the right hand, that last phalanx with the finger-nail, is preserved, while the intermediate phalanges have atrophied.

You see that on sticking this pin into the various areas

affected, that there is absolute loss of sensation. I might drive the pin through any one of the fingers and the patient would not know it was being done.

I want to call your attention to the facial expression of this patient—the wildness of his eyes, the sadness in the expression of them. What is the diagnosis?

The evident lesion is a tubercle with areas of infiltration and deposit.

This eliminates all of the groups of the ordinary classification, excepting the hypertrophies and the newgrowths. Hypertrophies of the skin are not trophic purely and are not degenerative. Their lesions are not tubercles and they do not result in atrophy of all tissues, even though the skin may suffer.

Of the new growths, those undergoing degenerative changes belong to the eruptive type, including syphilis, lupus, leprosy, mycosis fungoides, the scrofuloderms, and the cancer group.

The trophic element, anesthesia, and lesions of tubercles differentiate cancer.

The absence of glandular involvement, the trophic element, and the freedom from acute inflammatory evidence eliminates the scrofuloderms—usually of glandular origin.

The trophic element, anesthesia and character of the lesions, differentiate mycosis fungoides. Lupus is excluded by the location and character of the eruption, the variety of its evidence, and the absence of purely granulomatous lesions.

The lesion of lupus (*vulgaris*) is always more or less soft to the touch.

Syphilis is excluded by the location, arrangement, and distribution of the tubercles, as well as by the trophic element. The tubercles of syphilis have characteristic crescentiform arrangement; or, they are generally disseminated over the extensors of the extremities. This leaves the diagnosis of leprosy, by exclusion.

The patient gives a history of the gradual development of the disease for the past three or four years. His hands gradually became numb and lost their power of holding things. This progressive symptom was associated with rheumatoid pains in the arms. After more than a year, the lesions on the

face appeared, first as thickening of the skin, developing gradually into distinct tuberculation.

The diagnosis of leprosy, as of any skin disease, can be made by differentiation to an exclusion of all other skin diseases, but there are, in leprosy, certain classic symptoms, of which most physicians have only too little knowledge.

To the trained eye, leprosy should be quite easy of diagnosis, and I confess that knowing its prevalence in Louisiana as I do, I have little difficulty in recognizing the cases which are all too numerous on the streets of New Orleans.

I have suggested, as the classic points in a diagnosis of leprosy, this table:

Let us take this table in the case before us:

- | | |
|---|--|
| 1. Habitat, whether community or family domicile. | 1. The patient lives in the 3d district of New Orleans, a section in the French quarter from which fully half the cases of leprosy in Louisiana have been observed. He is a native Louisiana Creole. |
| 2. History of contact with, or exposure to the disease. | 2. No history of contact. This is usual, because if doctors do not recognize leprosy, how can the lower class of laymen be expected to? |
| 3. Anesthesia. | 3. Anesthesia is present wherever the eruption appears. |
| 4. Trophic disturbances. | 4. Trophic disturbances evident. |
| 5. Eruptions of bullæ in successive crops or of a single one recurring. | 5. No history or recollection of bullæ (the scars on dorsi of hands suggest that these were present). |
| 6. Perforating ulcers of the hands or the feet. | 6. There are several ulcers on the feet at various stages of development. |
| 7. Muscle atrophy. | 7. { Both, muscle atrophy and
8. { claw-hand, are present. |
| 8. The "claw-hand." | |
| 9. Clubbed fingers. | 9. Positive. |

- | | |
|---|--|
| 10. Discolored and blunted nails. | 10. { Anesthesia general on hands. In early cases this |
| 11. Characteristic anesthesia of the little finger, an early sign. | 11. { sign is clear and usually the left little finger is first affected. |
| 12. The leonine face. | 12. Leonine face comes later ; it is sequellent upon the present appearance of "satyriasis" in our patient. |
| 13. Leathery ears. | 13. Present. |
| 14. Ectropion of eyelids and lower lip. | 14. Evident. |
| 15. Persistent mutilating ulcers at the articulations of phalanges of fingers and toes. | 15. { |
| 16. Deformity of fingers and toes from loss of phalanges. | 16. { Characteristic here. |
| 17. Hunted, anxious look. | 17. Sadness, but hunted look also. |
| 18. Loss of expression in the face. | 18. When the face is covered with lesion, the muscles become paralyzed and all expression goes, except that of a permanent mark of leontiasis. |
| 19. Finding of lepra bacillus. | 19. This patient has not been examined for the bacillus, but the clinical picture makes this unnecessary here. |

Where it is necessary to a diagnosis, the best method is to remove a tubercle ; tease a section, stain with fuchsin, decolorize, and the bacilli are usually found as small rods, closely resembling the tubercle bacilli

In white subjects, leprosy is characterized further by the striking and peculiar color of the lesions. From the very first evidence of leprosy lesion, up to the final dissolution of the patient, there is a typical brownish hue in the eruption. As the lesions grow older the brown is more marked and becomes

purplish as well. I have called your attention to this even in the lesions in this patient.

Usually, leprosy is subdivided into varieties, but the tendency is to broaden the study of the disease. Macular leprosy, tubercular leprosy, and mixed leprosy are all leprosy of the same origin.

The bacillus of leprosy has sites of predilection for its deposit. If this happens to be in the nerve, nerve lesions are developed with suitable symptoms and with consequent trophic disturbances. If, on the other hand, the skin is the site of deposit, the skin shows the evidences, first by exaggerated symptoms of sensation, and as the bacilli develop, causing morbid tissue increase, the absence of sensation ensues.

While the macule of leprosy most often first announces the disease, this is by no means the rule; the tubercle may come without warning.

I shall show you a case of a typical macular eruption of leprosy indicating the way in which the disease first appears.

Our time is almost exhausted, and I want to say a few words about treatment and about prophylaxis.

Leprosy is a contagious disease. It is a disease slowly progressive, and its victims live from three to twenty years.

The tubercular type is the more rapidly fatal. Its development is due to the growth of the bacilli at different points in the body, causing new growths.

Treatment must be directed at (1st) controlling the spread of lesions of the disease, (2d) removing the evident lesions.

Leprosy is considered incurable. I believe that this is so, because no systematic attempt has ever been made to try to cure it.

Spasmodic methods of treatment have been evolved and have been discarded.

To my mind, the basis of treatment is tonic, and specific. I believe every case should be kept on arsenic or strychnine, or both. This should be continued throughout the course of the disease.

Specific treatment as yet has been based either upon empiricism (Gurjun oil, chaulmoogra oil, salol, ichthyol, airol, eucrophen, salicylate of soda, etc.), or upon deduction.

Serum treatment of leprosy has been tried, with only partial success—a success which any remedy may achieve in a few instances.

The logic in this treatment is as strong as with antitoxin treatment or serum treatment of other diseases, but the results have not been recorded.

I believe that treatment should be directed at starving out the bacilli, or by destroying them, either by increasing tissue resistance or by finding a specific lepra-bacillicide.



FIG 2.—Macular Anesthetic Leprosy.

In my own experience, I have found the best results from chlorate of potassium in doses of from 30 to 60 grains daily, well diluted. I have had more good results from this drug than from any other.

The question of treating leprosy in private practice, however, will not often arise with you. The question of public protection must arise. The disease is located in nearly half of the States of the Union. Congress has already passed an act

authorizing the U. S. Marine Hospital Service to investigate leprosy in the United States. (March 10, 1899.)

You should know the disease when you see it and you should report the cases when you have seen them. Public protection demands this, for the indiscriminate commingling of lepers in community life must result only in the spreading of the disease, and the isolation of these cases is necessary to stop the increase in their number.

Just a moment for the other case I spoke of—typical anesthetic macular leprosy. Note the deeply pigmented borders, faded toward the center. As yet there has been only a limited area affected. This case should be amenable to treatment.

Anastomosis of the Ureters With the Intestine.

By REUBEN PETERSON, M.D.,

CHICAGO, ILL.

Author's abstract of paper read before the American Gynecological Association, at Washington, D. C., May 1, 1900.

THE experimental work forming the basis of this article was undertaken with the view of studying the changes resulting from anastomosing the ureter with the intestinal tract, and of determining whether the procedure could, with safety be employed in human beings. The important and far-reaching changes in the kidneys and ureters resulting from a bacterial invasion from the septic cavity into which the ureteral orifices were implanted had not been satisfactorily studied. The question will always arise, whether infection of the kidney will invariably follow its ureteral union with the intestine. If this be true, can perfection of operative technique reduce this infection to a minimum so that the kidney can recover and remain a useful organ? These questions must be answered before the surgeon will subject his patient to an operation, from which, once performed, there is no retreat.

Perhaps the most striking fact revealed by a study of the experimental work which has been done on uretero-intestinal

anastomosis is the exceptional high mortality accompanying the operation, whether one or both ureters are implanted in the bowel. Out of sixty dogs operated on by various experimenters, where one ureter was implanted into the intestine, there were thirty-five recoveries, or 61 per cent. mortality, while out of sixty five dogs undergoing bilateral ureteral anastomosis, only eight recovered, or a mortality of 87 per cent.

The causes of death were various, but in a general way it may be stated that the majority resulted from peritonitis through a giving way of the utero-rectal stitches, and the subsequent escape of urine into the peritoneal cavity, or to an overwhelming infection of the kidney, ascribed to nephritis or uremia.

A careful review of the different operative procedures shows that the primary mortality was large by all methods. The method which called for the least amount of suturing of the ureter itself was found to give the best results. The post-mortem on the animals surviving the operation for any length of time in nearly all instances showed unmistakable evidence of stenosis of the ureteral orifice, hydro-ureter, hydro-nephritis, and pyelo-nephritis. In no case was it demonstrated beyond dispute that the kidney was normal after the corresponding ureter has been implanted into the rectum.

A critical survey of twenty-eight uretero-intestinal implantations in man shows the primary mortality, 32 per cent., to be exceedingly high. If to this be added the uncertainty as to subsequent renal infection, in the cases surviving the operation, it must be admitted that uretero-intestinal anastomosis is not an operation of choice.

The subsequent history of the successful cases places the operation in a still more unfavorable light. Of the nineteen recovering, two died later of pyelo-nephritis, and two of uremia after implantation of the second ureter. The post-mortem in one of these revealed a fibrous condition of the kidney whose ureter had been implanted fourteen months before. No autopsy was secured in the second case, but from the similarity of symptoms it is fair to assume that the pathologic conditions were the same as in the first case.

Of the four surviving cases with implantation of one ureter, one is living and well at the end of eight years, but it is not

stated that the discharges from the rectum contain urine. Renal infection was responsible for death in each of the nine fatal cases.

In 1894 Madyl reported two cases of exstrophy of the bladder operated on by an original method consisting of the implantation of the vesical trigonum with its ureteral orifices into the sigmoid flexure. The predominant idea of this operation was the preservation intact of the ureteral orifices and their utilization as a means of preventing an ascending renal infection.

In order to ascertain whether this theory is borne out by clinical facts, the author has collected and tabulated thirty-six cases of operations performed according to this technique. Of the thirty-six cases, five died from the operation, and cases, four and fifteen months later, of pyelitis. This operative mortality is surprisingly low for such a difficult major operation. Thirty-three of the operations were for exstrophy of the bladder, there being twenty six males and five females.

The sphincteric control over the urine is reported as remarkably good, it being noted as poor in only one case. There were six fistulæ following the operations, all noted as subsequently closing. The primary and secondary results of uretero-trigono-intestinal anastomosis are so much superior to those of ureteral implantation without the preservation of the vesical ureteral orifices as to always demand the performance of the first operation in preference to the latter.

A summary of nine cases of uretero-intestinal anastomosis through the formation of rectal fistulæ shows that six of these were for exstrophy of the bladder, with a mortality of 67 per cent. Two vesico-vaginal fistulæ were both cured, and there were two cases of vesico-vagino-rectal fistulæ.

Frank's experiments have shown that in dogs vesico-rectal anastomosis is a comparatively safe procedure; that the bladder remains free of feces, and that infection of the kidneys does not result in some of the cases operated upon.

In the author's experimental work covering a period of eighteen months, three series of experiments were conducted. Dogs were used for all experiments, and the most aseptic technique was employed. These experiments were as follows.

I. *Bilateral uretero-intestinal anastomosis*.—Both ureters were implanted simultaneously in the rectum in twenty-eight dogs, with five recoveries, and twenty-three deaths. Various forms of operation were employed, the most common being an incision made in the bowel wall through the serous and muscular coats, the ureters being implanted in the rectum through small incisions made in the mucosa; they were held in place by sutures passing through the mucosa and either their outer coats or peritoneal covering. The closure of the incision by Lembert's sutures completed the operation.

In most of the cases death ensued from general peritonitis accompanied by extravasation of urine into the peritoneal cavity. This escape of urine in most instances arose from the slough at the site of the anastomosis.

The ureters were, as a rule, dilated, although the ureteral orifices were patent.

In the five dogs recovering, the operative results may be termed fairly good. In only one case was a single ureter found not to be patent. In four of the cases, however, the ureters are noted as being dilated. In one there was pyo-ureter, in another hydro-ureter.

Three of the cases died of pyemia, secondary infection, and endometritis, forty, eighty four, and thirty-nine days, respectively, after operation. In one dog, living thirteen months after the operation, there had been a recovery from the infection with resulting contracted kidneys.

II. *Lateral uretero-intestinal anastomosis*.—Sixteen dogs were operated upon, with three recoveries; twelve died of general peritonitis due to leakage through stitch holes. The object of these operations was to unite the ureter to the bowel by a lateral anastomosis so that dilatation of the ureter and ascending infection could be avoided.

In two of the dogs recovering, through faulty technique the intestinal mucous membrane closed and stenosis resulted. In the other dog pyelo-nephritis resulted in a short time, although there was no obstruction to the flow of urine.

III. *Uretero-trigono-intestinal anastomosis*.—Twenty-one dogs were operated upon; twelve died of peritonitis through the sloughing of flap; four died of peritonitis from other causes.

The first twelve cases died from ligating the vesical arteries supplying the flap. In nine experiments, where these arteries were preserved, there were five recoveries from the operation.

My modification of Maydl's technique consists in uniting by means of a continuous suture of a rectangular bladder-flap containing the ureteral orifices to the bowel after the latter has been opened. A review of the five experiments where the dogs recovered shows that in one the ureter was occluded with the formation of an atrophic kidney. Of the four remaining cases one had a non infected kidney where the trigonum was implanted, pyelo-nephritis on the other side where uretero-rectal anastomosis had been made. One died in forty-four days from active pyelo-nephritis where the mucosa of the ureteral orifice had been accidentally removed. One lived two months without signs of infection of the kidneys; one had pyelo-nephritis after eight days where the mucosa was removed from the natural orifice and no sign of kidney infection in the other kidney whose orifice was implanted intact.

The general conclusions are as follows:

1. The primary mortality of uretero-intestinal anastomosis both in experimental work on animals and in man is exceedingly high.
2. The best technique is that requiring the least amount of suturing of the ureters themselves.
3. All efforts to prevent ascending renal infection in animals or in man where the ureter has been implanted without its vesical orifice have proved futile.
4. It is impossible to determine in advance the extent of the infection which will result from uretero-intestinal anastomosis. The patient may die in a few days of a pyemia, or in a short time of pyelo-nephritis, or in rare cases may recover from the infection with resulting contracted kidneys.
5. Hence the operation is unjustifiable, either for the purpose of making the patient more comfortable, as in exstrophy of the bladder, vesico-vaginal or uretero-vaginal fistula, or for malignant disease of the bladder.
6. The results of uretero-intestinal anastomosis through

the formation of vesico-rectal fistulæ have not been favorable up to the present time.

7. The success of Frank's experimental work in vesico-rectal anastomosis justifies the expectation that the future results of this operation will be more satisfactory.

8. The primary mortality of uretero-trigono-intestinal anastomosis is low for an operation of this magnitude.

9. While it can not be denied that ascending renal infection may occur after this operation, the infection, as a rule, is of such a type that the chances of the individual's overcoming it are good.

10. Hence the operation of implanting the vesical flap with its ureteral orifices into the intestine is a justifiable surgical procedure.

11. There is no valve guarding the vesico-ureteral orifice ; nor does the circular muscle layer of the ureter, nor the bladder muscles themselves act as a sphincter.

12. It has been abundantly demonstrated by experimental and clinical work that the rectum tolerates the presence of urine, and acts as a good substitute for the bladder, and that good control over the anal sphincter is maintained.

Peroneal Muscular Atrophy.

By GIVEN CAMPBELL, M.D.,

ST. LOUIS, MO.

Read before the Medical Society of City Hospital Alumni, March 1, 1900.

BEFORE presenting this case it may be well to say a few words as to the diagnosis of this rare and but little understood disease, and to see in what manner this case, and a previous one that it has been my fortune to discover, can make clearer the clinical picture of the condition.

Peroneal muscular atrophy was first adequately described by Charcot and Marie in 1886, and later in the same year it was independently described by the Thesis of Howard Tooth.

Up to July, 1899, Paul Sainton, in his Thesis on Doc-

torat, was able to collect but 39 genuine cases, and of this number but 2 have furnished autopsies.

The disease has been variously called progressive muscular atrophy of the peroneal type, or leg type; Charcot-Marie disease, and neuritic muscular atrophy.

Clinically, the disease varies as to details of the progress, but pursues its march along certain definite general lines. The earliest symptoms consist of a very gradual muscular atrophy, beginning in the lower extremities. This atrophy follows an extremely slow, but regularly progressive, course, and is symmetrical in distribution. Usually beginning in the small muscles of the feet it extends upward and invades the muscles of the lower leg and then the lower fibers of the thigh muscles; frequently checking its progress at a little above the knee. Not until the lower limbs have been affected for several years is there found any involvement of the upper extremities and then the same progress begins in them. A gradual wasting of the small muscles of the hands, slowly, extending up and the muscles earliest involved will be the ones most atrophic. This wasting is, of course, accompanied by a weakness of the affected muscles, but the two go hand in hand, the weakness never preceding the wasting nor disproportionate thereto.

Along with these derangements of the motor system the sensory involvement is always slight and most frequently entirely absent. When present such symptoms do not occur until late in the disease; they consist of numbness, tingling or formication and, rarely, if ever, advance so far as to produce definite anesthesia. The muscle reflexes, such as the knee-jerk, are usually lessened or abolished, while the skin reflexes are often unaffected or even increased. The atrophic muscles are flaccid and reflexes in them are absent. The muscles of the body are often especially liable to cramps and there is very frequently a tendency to fibrillary twitching, chiefly in the muscles of the extremities. When, to the above, we add that these symptoms usually have their onset in the second half of childhood and in individuals among the relatives of whom the same disease is present, we have, while not completing the clinical picture, at least drawn its principal lines.

To recapitulate, then, the disease consists of weakness

and wasting going hand in hand, beginning in the lower extremities and extending up; of insidious onset and gradual progression; unaccompanied by any marked sensory disturbance, and leading to a flaccid paralysis with tendency of the other muscles to cramp and to undergo fibrillary twitching. This occurring in a young person with a hereditary history makes a picture that is too clear to be mistaken for that of any other disease. But when the symptoms are considered more minutely many differences are observed between one case and another, and much diversity of opinion exists as to their interpretation. For, while it is conceded that the atrophy begins in the periphery and extends toward the center of the body, it is questioned just where the wasting begins and how far up it extends.

The *typical* march of the atrophy is undoubtedly that in which it ceases its inward progress at a little above the knee or elbow, producing in the lower limb a more or less complete wasting of all the muscular tissue below where the garter is worn—the garter atrophy, so-called. Many writers maintain that the muscles which move the limbs on the trunk, as at the shoulder or hip, are never affected in this disease. Concerning the lower limit of the atrophy many writers claim that the atrophy begins in the peronei muscles and then in the extensors of the foot and the calf muscles, but does not begin in the small muscles of the foot.

In considering these points, the cases I have studied will be of interest, for in my first case, with a duration of 3 years, there was distinct weakness of the right deltoid and supinator longus, and less so of the left deltoid, before there was any noticeable atrophy or weakness in the hands or forearms, while in the lower limbs, all the muscular tissue was wasted, the atrophy in these members pursuing the usual course, except that it did not stop at the garter but involved the entire limb. In contrast to this is my present case, in whom, after 17 years' duration, the wasting has not extended noticeably beyond the small muscles of the feet and hands; and, in my opinion, the very slow progress of the atrophy in this individual makes manifest what is present but less noticeable in the majority of the cases, namely: That the atrophy begins in the small

muscles of the feet and not on the peronei muscles. This view was held by Charcot and Marie and is reiterated by Sainton. We must remember that it is only when the small muscles of the feet are atrophied for a considerable time, with normal tone and power in the long flexors and extensors of the toes, that we get the characteristic deformity here present, similar to that observed when the same causes acting in the upper extremity produce what is termed *main en griffe*. So that unless the disease is of very slow progress little deformity is present and the loss of function in the foot due to atrophy of the small muscles is slight, so that their atrophy can be very readily overlooked, or masked by the helplessness due to the weakness of the lower leg muscles, which in most cases supervenes shortly after the involvement of the small muscles of the foot.

Concerning the pathology of this diseases much doubt still exists. According to the German school the disease consists of a very chronic neuritis, the malady being called by them neuritic muscular atrophy, and in substantiation of this contention changes have been found in the peripheral nerves. The more generally accepted view, however, is that the disease is due to degenerative changes in the cells of the anterior horns of the cord, along with some degeneration of the posterior columns.

But few autopsies have ever been held in this disease, and in the only complete ones, the above-mentioned changes in the spinal cord were found. The condition is hereditary and is probably closely allied to other diseases of the family type, such as Friedrich's ataxia.

The history of the case now before the Society, as taken from my record, is as follows:

W. K., 32 years of age. Family history: Mother's sister epileptic, otherwise family history clear. Past history: Born at term after normal gestation; well until 2 years of age; nursed by mother until 1 year old, but mother had very little milk and supplied the deficiency from birth by oat-meal water. At 2 years of age he had cerebro-spinal meningitis, ill one month, good recovery, no sequelæ. Well and active up to 15 years of age, at which time mother noticed that the instep was grad-

ually becoming higher; she had to have shoes made to order for him. This has steadily progressed, feet becoming smaller ever since, progress gradual and steady. For several years after onset of atrophy there was very little inconvenience in walking; this has increased latterly and is due rather to the deformity than directly to the muscular weakness. Six years ago the patient was much troubled by cramps in his muscles, chiefly in the legs, and this tendency to cramps, while not so severe, is still present. For the last four years distinct and annoying fibrillary twitching has been present, chiefly in the muscles of the arms. There has never been any pain nor other sensory involvement. The patient's physical health has remained good. For the last fifteen years he has been gradually growing deaf and this loss of hearing has been complete for the last three years. Several years ago he noticed a dimness of vision, which was pronounced due to a cataract and an operation was done, with improved vision for a few weeks and then a return of the blindness. The cataract was bilateral, stellate and on the posterior surface of the lens. Rectal and vesical symptoms absent, sexual power normal.

The patient is moderate in the use of tobacco; he does drink nor use tea or coffee excessively.

Physical examination reveals no disease of the vital organs; urine normal; the muscle reflexes are very greatly diminished; knee-jerks barely obtainable by reinforcement; the superficial reflexes, however, are distinctly increased; tickling the sole of the foot almost producing a clonic spasm of the flexors of the knee; sensation normal to touch, pain and temperature; no tenderness of nerve trunks; no ataxia; grasp right hand 80 pounds, left hand 75 pounds; the calf of the leg measures 31.5 cm. on both sides; the thigh, 5 cm. above the upper margin of the patella, right 32 cm., left 31.5 cm.; thigh, 7.5 cm. below the gluteal fold, right 41 cm., left 43 cm.; thigh, 2 cm. below the gluteal fold, right 46 cm., left 46 cm.; the neck measures 34.5 cm.; there is slight reaction to galvanism in the thigh and leg muscles, and the muscles contract rather sluggishly; to faradic electricity there is no contraction; there is a slight but perceptible wasting in the small muscles of the hands; the feet show the characteristic deformity due

to wasting of the small muscles, with normal tone and power of the long flexors and extensors of the toes. As will be seen, there is little wasting in the leg or thigh. In a normal individual the neck and calf should measure the same, while in this patient there is a difference of 3 cm. But owing to the



deformity of the feet there is less use of the legs, and the atrophy is probably only such as is due to this disease. My reason for thinking that this is true, is that the circumference of the thigh is proportionate to that of the calf, while if the atrophy were directly due to this disease the calf would be much more atrophic than the thigh.

When we remember that peroneal atrophy is a slow wasting of the muscles of the body due, probably, to changes in the nerve cells supplying these muscles, and that the cell body of the neuron is the center for the nutrition of the entire cell and probably for the trophic action that the neuron exerts over its muscles. And that the farther the the motor branch or nerve fibers is prolonged away from its cell body the less is the cell body able to protect this process or the muscle that it supplies. We will understand why the muscles at the extremities are the first ones affected, and that it is only as the disease increases that the muscles nearer the body, that is, muscles with shorter nerve fibers can become involved.

On the rapidity and extent of this process depends largely the differences in the clinical picture. As to whether the disease is a neuritis or is due to changes in the motor cells of the cord, is more, in the writer's opinion, a question of names. In the light of modern research the nerve cell and its branches are in such close relationship that it is, perhaps, impossible for disease to occur in one part of a neuron without all parts suffering changes. Besides the degeneration, above spoken of, occurring in the motor cell, whether in its cell body or peripheral branch, the nerve fiber, there are other changes of a degenerative nature in the dorsal columns of the cord.

The coincidence of deafness, beginning a little after the atrophy and gradually leading to total loss of hearing, is probably accidental, but its completeness and the absence of bony conduction points somewhat to a central origin.

In regard to the eye changes and the influence which such a disease might possibly have in producing a cataract or other troubles of vision, I should be glad to hear from Dr. Saxl, by whom the case was referred to me.

Fysician is the way the agricultural editor of the *East Aurora Journal* is now pleased to designate the practitioner of the noble art of healing. Though advancing in years, he continues to have his monthly periodicals of protest, and doubtless things to protest against grow fewer every year in East Aurora. He is himself, however, such a "Filistine" that he continues to spell the name of his journal with a Ph.—*Medical Record*.

Abortion; Or, Expulsion of the Unviable Fetus.

By CHAS. O. MOLZ, M.D.,

BEDFORD, IND.

Read by title by Dr. H. Talbott, St. Louis, Mo., before the Medical Society of City Hospital Alumni, April 5, 1900.

ABORTION is met with quite frequently in practice by the obstetrician and always causes anxiety and apprehension before the case has terminated favorable—if it does so.

The premature expulsion of the fetus has been divided by most authorities into three classes: Abortion—the expulsion before the sixteenth week; miscarriage—the expulsion between the sixteenth and twenty-eighth week; and premature labor—the expulsion between the twenty-eighth week and full term. But it is our purpose to discuss the expulsion of the fetus before viability, *i. e.*, the twenty-eighth week, and to avoid confusion we will use the term abortion for that whole time.

The uterus has four important functions, but the only one necessary to consider is that one of receiving the impregnated ovum and furnishing it a source of nutritive supply. To this is applied the term conception, and it is necessary to make this distinction between impregnation and conception, for impregnation may take place twelve times a year and yet conception not take place once.

After conception has taken place there is a change throughout the entire economy by a reciprocal communication that is set up through the nervous system. Locally, the uterine mucous membrane thickens throughout its entire extent, forming what is called the decidua vera, while a portion of it grows upward around the ovum. This process continues until the ovum is entirely surrounded and this surrounding membrane still retains the old name decidua reflexa, while that portion where the ovum is attached to the uterus has been termed the decidua serotina.

In a short time the allantois is developed, followed by the

amnion and chorion. The chorion is attached to the uterine mucous membrane extending between the utricular glands by means of tufts, and it is by means of this attachment that the fetus by a process of endosmosis is nourished from the mother's blood. This nourishment proceeds in this manner until the end of the second month, when the placenta begins to form by the chorion losing all of its tufts except at one point, where it thickens and becomes extremely vascular. This point of thickening and vascularity constitutes the placenta.

In considering the pathology and natural history of abortion, one of several things may occur. Either the entire contents of the uterus, the decidua vera, decidua reflexa, the amnion, chorion, and fetus may be expelled, or the fetus may be expelled with the amnion and chorion, leaving the deciduæ, or the fetus alone may be expelled, or when utero-gestation is further advanced, the fetus and membrane may be expelled, leaving the placenta. In either case one is apt to console himself with the idea that everything has come away and that consequently there will be no further trouble. But alas! how many have suffered the penalties of such consolation.

The causes of abortion are many and ofttimes the true causation can not be ascertained. To cases occurring repeatedly, without apparent cause, the term habitual abortion has been given. All the causes of abortion may be classified into:

1. Systemic or parental causes.
2. Fetal.
3. Uterine.

Under paternal systemic causes we may name precocity, syphilis, debauchery, senility, and debility.

Under maternal we can enumerate deficient nutrition, syphilis, mineral poisons, exanthematous fevers, acute inflammatory disturbances of thoracic and abdominal viscera, high temperature, especially above 104° F., which is dangerous, while 106° F. is fatal to the fetus, plethora, anemia, vomiting, constipation, albuminuria, chronic ergotism, the early or late occurrence of pregnancy, and the abortion habit.

Blows, falls, excessive venery, excitement, violent exertion, sea-bathing, concussions from accidents, irritation of the mammæ, tooth-pulling, fear, grief, joy, anxiety, or anger may

all be exciting causes of an abortion. In women with what is called "irritable uterus," the slightest exciting cause may bring on a contraction of the uterus, while others may receive all sorts of injuries or have major operations performed without the slightest disturbance of uterus or ovum.

Certain drugs act specifically upon the muscles of the uterus and produce abortion.

The principal fetal cause of abortion is death, which may be the result of many of the causes enumerated under systemic. Among other fetal causes are twisting of the cord, and multiple pregnancies.

Under uterine causes we have displacements, namely, prolapse, antelexion, anteversion, retroflexion, and retroversion. But abortion is rare, except with retroflexion. Lacérations of the os from previous pregnancies and morbid growths may be mentioned.

Syphilis and retroflexion are the most prominent causes of habitual abortion and their malign influences is peculiarly exerted at the end of the third month. The reasons for this are :

1. This is the third menstrual period when the nutrition of the fetus is changing its character.
2. The placenta is now rapidly developing.
3. The uterus is now beginning to rise up out of the pelvis.

It is the time that syphilis affects the placenta, and when retroflexion is most apt to be attended with conditions favorable to the production of abortion.

Retroflexion is a more frequent cause of abortion than other displacements because of the marked vascular engorgement incident to this form of displacement.

I do not think it necessary to consider criminal abortion, nor is it necessary to mention the many and varied means that are in vogue to produce it. I am sorry that the women of to-day have become so educated upon this subject by having abortions produced, and by information obtained from unscrupulous medical men that they are able to produce abortion as easily as if they had received a thorough education on that subject. This is to-day the cause of the increasing frequency of abortion, for statistics prove that about one of every five pregnancies end in abortion, though it is stated that 90 per

cent. of child-bearing women abort naturally one or more times during their lives, and it is even more frequent among the lower classes.

The prognosis of abortion is usually good, except in cases of criminal abortion produced by instrumental aid, or where antiseptic methods are neglected in the treatment. This favorable prognosis is, however, applicable only to life, for when the question of future health is studied the same favorable opinion can not be given, as it is an unfortunate fact that many women are invalided by abortion. The prognosis of criminal abortion is the most unfavorable, because, as a rule, they are performed by charlatans and unscientific medical men, and it is easy to see why the results are so unfortunate.

If death follow an abortion its causes may be many. To thoroughly understand this we must appreciate what is taking place. The fetal shell consisting of decidua reflexa, chorion, amnion, and placenta, if the latter be developed, has to come out. The decidua vera is usually torn away in places, and it is from this condition that the greatest number of sequelæ arise. The principal sequelæ as given by Thomas are :

1. Hemorrhage.
2. Putrid intoxication.
3. Septicemia and peritonitis.
4. Suppurative arthritis.
5. Cellulitis and abscess.
6. Embolism.
7. Air in the veins.
8. Tetanus.
9. Uterine hydatids.
10. Melancholia.

Thomas states that hemorrhage, putrid intoxication, septicemia and peritonitis, suppurative arthritis, cellulitis and abscess are very common, while the others are pathological curiosities.

The symptoms of impending abortion are few, principally two, namely, bleeding which may appear for days before abortion really takes place and which is due to the separation of the placenta from the uterine wall. This symptom is followed by pain, which is intermittent in character and is due to the

contraction of the uterine muscles and are in reality miniature labor pains. Another symptom that occurs frequently is vomiting, and while it is not as frequent as the others, it is a fairly constant symptom.

After the third month of pregnancy we may have added the following symptoms: Chilliness, vomiting, anorexia, nervousness, ennui, frequent micturition, flighty pains in the head and abdomen, and a watery or mucous discharge which may appear in the vagina some days before bleeding or pain commences.

Before the third month the contents of the uterus are usually expelled entire, and when this occurs the hemorrhage is only slight in degree, but should only the fetus be expelled and the remaining sac collapse, bleeding is usually profuse. Bleeding and pains may cease for hours, days, or even weeks, but should anything remain in the uterus they will develop again later, and if decomposition has taken place we will have added a foul discharge, and perhaps a chill, vomiting, fever, general depression, and all the concomitant symptoms of septic infection.

Bleeding and pains having occurred and having obtained a statement from our patient, in which we may have elicited a history of previous abortions, or a recent injury, we proceed to make a vaginal examination, and our diagnosis is rendered positive by finding a partial or complete dilatation of the cervix, and a presentation in it of some portions of the uterine contents. We may, however, be misguided by a contracted cervix after all or part of the uterine contents have been expelled, but it may be taken as a general rule that should the uterus be completely empty all symptoms will subside, while if not empty they will continue. We should, if possible, examine all discharges, preferably under water, for traces of membranes, fetus, or chorion villi, otherwise abortion may have taken place without recognition.

If the question of diagnosis between returning menstruation and abortion arise, the following points may assist us, namely, that bleeding in menstruation generally relieves the pain, while it does not do so in abortion; menstruation occurs at the period, while in abortion this is not necessarily so, and

yet most abortions occur at or near the menstrual period. We may get some signs and symptoms of an existing pregnancy, together with a history of a cause for the present existing symptoms.

Should the history and examination not clear up the diagnosis, we can only wait until the cervix has dilated sufficiently to admit the finger, or until a part of the ovum has been expelled and recognized.

An abortion is usually inevitable when the bleeding is persistent and profuse, the pains frequent and increasing in severity and there is considerable dilatation of the cervix which rapidly progresses, but exceptions may occur even if these symptoms are pronounced. Should the fetus be dead, or the membranes ruptured, the abortion becomes still more inevitable, but it is not always easy to be sure of these facts, and very exceptional cases occur in which a dead fetus is retained for months or years. Pregnancies have been known to continue after the passage of sounds, catheters, etc., into the uterus entered criminally or in making examinations, and they have been known to continue even after the membranes have been ruptured.

Where the discharges have been thrown away before our arrival and it is impossible to say that the uterus is entirely empty, the only remaining method of diagnosis is to pass the finger into the uterus and feel whether portions of the membrane or placenta still remain.

The diagnosis of a complete but concealed abortion is very difficult and depends chiefly upon the history and signs of a pre-existing pregnancy together with the signs and symptoms of a recent abortion, upon the recognition of an enlarged uterus growing smaller, the lochial discharge, and milk in the breasts.

King gives the following as signs of fetal death: "Languor, low spirits, pallor, chilliness, perhaps some fever, sunken eyes surrounded by darkened rims, nausea, anorexia, fetid breath, and bad taste in the mouth, a feeling of weight, coldness and discomfort in the hypogastrium, flabbiness, with stationary or diminished size of abdomen, with loss of its normal firmness and elasticity, the uterus rolls more easily from side to side, flaccidity and diminished size of the breasts with the appear-

ance of milk in them. These symptoms may not come on for some time after death, or they may also be produced by other causes. The occurrence of several is necessary for diagnosis, which even then it is not positive. Fetal discharges per vaginum, and the absence or cessation of previous recognized heart-sounds and fetal movements are important."

The treatment of abortion resolves itself into a question of either one of two things—whether the abortion is preventable, or whether it is inevitable.

If the bleeding is small in amount, the pains few and not strong, the cervix not dilated, and, as far as we can learn, the membranes unbroken, we try to prevent it; but should the opposite conditions prevail, we must hasten delivery to put the woman into safety.

The treatment may be of two characters—what is called the expectant treatment, and what is known as the radical treatment. My personal experience leads me to favor and advocate the radical treatment, especially when we are sure that the abortion is inevitable, or that the fetus has been expelled and the membranes remain. I do not think we can empty the uterus too soon, both for our own reputation, or for the safety of our patient, and particularly so in country practice, where we are not in immediate reach of our patient.

If we are called to a case in which the symptoms are slight, we should put our patient to bed, cautioning her to lie upon her back and remain absolutely quiet, no heavy bed-clothing should be allowed but she should be covered as lightly as possible. No one should be permitted to remain in the room except the physician—lady attendant and husband if it is desired by patient. The patient should be quieted by kind encouraging words from the physician, and if this is not successful, soothing drinks may be given, but stimulants should be avoided. The giving of opium has its advocates and it has its opponents, but personally I give it in good-sized doses, repeating if necessary. *Viburnum prunifolium* has given me good results and is recommended highly by some of the authorities of the day. Astringent solutions may be used to stop the bleeding. Ergot and the tampon should never be used in trying to prevent an

abortion. But both have their places in completed abortions as they have in labor.

The cause should be removed if possible, and should any displacements of the uterus exist they should by quiet and gentle manipulations be corrected. Often we can determine the cause and yet not be able to prevent the abortion; all attempts at prevention should cease if fetal death occur, but in the earlier months of pregnancy this condition is impossible to diagnose.

Should all these efforts fail and the abortion be inevitable, we proceed to use other measures. In the majority of cases, especially in the first three months, interference may be withheld and Nature allowed to proceed; but still interference may be necessary in the early as well as in the late months on account of excessive bleeding.

When the abortion is inevitable and the physician is not within immediate call, I do not believe the axiom, "Meddlesome midwifery is bad," will apply. My practice is to empty the uterus completely, stop the bleeding, see that everything is all right, and proceed to my home happy in the thought that my patient will not bleed to death before I can be recalled.

If the abortion is inevitable or has proceeded so far that the fetus has been expelled, we will usually find the cervix dilated enough to admit the finger. If it is not, we can, by gentle stretching, cause it to do so; feel for the membranes if present. If they are presenting at the cervix, a gentle pull with the finger hooked around them will usually bring them away. If they are not presenting, a sweep of the finger within the cavity of the uterus will locate them, but no finger can do this unless the uterus is pushed down in the pelvis by the other hand pressing upon the walls of the abdomen.

After everything has been brought away and the uterus is empty, we should, if we have used our finger or curette in the uterus, use an antiseptic douche, thoroughly washing out the cavity. What antiseptic to use is left to personal preferences. I believe in curretting the uterus thoroughly and then irrigating with a 1 : 2000 bichloride of mercury douche, following this immediately with one of plain sterilized water, using a gallon for each irrigation.

After the third month the uterus is large enough to be

manipulated through the abdominal walls and by aid of this manipulation the contents can be expelled if the cervix is large enough to admit two or three fingers. It may be necessary to widen the cervix with the aid of a dilator if the resistance is too great for the finger. Anesthesia may be produced, but should we be alone a large dose of morphine together with some chloral may act just as well.

Everything having been removed, the cavity of the uterus douched, and bleeding stopped, we can leave our patient without having any fear of further trouble. As a rule, a few days in a recumbent posture will make all well.

In abortion of latter months more particularly, though it does well at all times, a uterine tampon of iodoform gauze may be used after the douching is finished. This tampon prevents hemorrhage, promotes contraction of the uterus, and effects drainage.

Asepsis and antiseptics are the foundation stones of success in treating abortion as well as in other surgical operations, and if we use them together, with care and prudence, we may usually be sure of success, confident that in any event we have chosen the best methods within the resources of the skilled, modern obstetrician.

REFERENCES.

Thomas, on "Abortion."

King's "Manual of Obstetrics."

On the True Interpretation of Certain Sounds in Physical Diagnosis.

By WARREN B. OUTTEN, M.D.,

ST. LOUIS, MO.

Read before the St. Louis Medical Society, April 7, 1900.

OWING to recent advances in acoustics it has become a mooted point whether or not the instruments used in physical diagnosis are competent to give a true interpretation of the sound emanating from trunk cavities. There

can be no doubt that the full scope and true "quality" of heart and lung sounds have not as yet been interpreted in their entirety. What has been heard by the application of the ear alone and the various forms of stethoscopes, no doubt, give a true interpretation as far as they go, but they are incompetent to amplify all sounds which are existent. The present means used by various sound amplifiers have not been placed upon a basis of comparison, hence a standard is lacking, and we are compelled to accept the simple accentuation of sound as being correct. Thus premising our subject, we will detail our views without further parley.

Sound is produced by motion acting upon molecules or ultimate of particles of which matter is composed; acting through the organ of hearing, exciting or producing sensation on the brain. Sensation can only be caused by matter and motion—matter is the stimulus, sensation is the result. Sound, then, is the resultant of conditions and can not exist without brain and nerve connections and the imparting of motion to ultimate particles of matter. Motion is the efficient cause of sound and sounds differ one from another in three ways: (1) in loudness; (2) in pitch; (3) in quality. Loudness depends on the quantity and degree of vibration of the particles of the sonorous body. Pitch is due to the rapidity of vibration of the particles entering into the composition of the sonorous body. The quality of tone emanates from diversified causes whereby marked peculiarities and characteristics are made manifest, and is technically termed quality.

The general surroundings, materials used, mental condition, mood of performer, hypnotic capacity, etc., all influence quality of tone. The quality of tone is dependent according to authority upon the number and relative intensity of the partial tones which accompany the fundamental tones. It is a well-established law in acoustics that when two sounds are in unison and in the same phase, they tend to reinforce each other, but if their intensity is equal, these sounds being in opposite phases they obliterate each other and silence must be the result. So the augmentation of sound depends upon the unison and the similarity of the phases.

Since the introduction of the phonograph, graphophone,

etc., and instruments used by physicians in physical diagnosis, the truthful recording and reproduction of sound becomes daily more imperative and important. Because a diaphragm used in the recording box of a phonograph will record sounds there is no evidence that these sounds thus recorded are truthful. The quality, character and peculiarities of tone have not been demonstrated by the various so-called talking machines nor in the instruments used in physical diagnosis. When the phonograph was first invented it was asserted that records could and would be made, having all the character and marked peculiarities of the tone possessed by individuals, so that an Edison might speak in truthful tones to ages yet to come. But this has not been accomplished. We believe that this has not been accomplished simply for the reason that unvarying and definite materials have been used, possessing in no sense the somatic and chemical range of adaptability used by individuals when exercising their capacity and power of sound utterance. In other words, we believe that to repeat and reproduce the human voice the recording means must have similar physical and chemical elements. We do not believe that glass, mica or hard rubber can truthfully record the human voice, that the quality of sound when so recorded will have the quality of glass, mica and hard rubber, and not the real quality of the sound made.

The truthful interpretation of sound depends upon the truthful interpretation of its quality and any medium which will not truthfully carry the partial tones accompanying the fundamental can not obtain the quality, which is but another name for true tone interpretation. The recording means must have similarity of phase in order to truthfully record.

In order that it may be better understood we will briefly explain our experiments in connection with this matter. Having become interested in the phonograph we began to experiment, and our first endeavor was not to augment sound, but aiming to repress it by means of increasing the number of vibrating agencies. First we took the reproducing or sound box of the graphophone which, as is well known, uses an inch and a quarter diameter glass diaphragm, about one ten thousandth of an inch in thickness, to both record and reproduce sound.

We removed this glass diaphragm from a reproducer or sound box and in its place stretched tightly over the frame of the sound box a layer of gold-beater's skin. Microscopic cover-slides were attached to this layer of gold-beater's skin, varying in number from 5 to 20. These cover-slides were placed in juxtaposition one upon another with a drop of glycerine between each. It was found that just so long as their weight did not interfere with vibration that the sound was augmented and at times, not always easily explained, wonderfully so. From this fact I was led to further experimentation; throwing aside the glass I began to experiment with animal membranes—such as gold-beater's skin, bladders, muscular coat of intestines and various fabrics, such as silk, linen, cambric, cotton, etc. In my experiments it was soon found out that not only equal tension but that a similar physical condition of each layer was necessary in order to obtain augmentation but quality as well. When, for instance, a layer of gold-beater's skin is stretched tightly over the frame of a sound box the next layer must be placed as equally tense, for if a single layer of membrane becomes crumpled and creased in its phase it obliterates much of the sound. But when these membranes are properly placed under equal tension and seemingly in the same phase they act in unison, and augmentation of sound occurs and additional basic notes are made manifest, not previously perceptible. Again, in order to obtain the best results, a central disk must be used so that the sound coming through the superimposed stretched membranes may be properly focused. Again, the spaces between the intervening layers must be separate and of equal distance and in the same condition. By placing these membranes one upon another, equal tension and space, and in similar condition, the sound is greatly augmented. We have varied the number only to have the sound augmented in proportion to the number so arranged, and we believe, improving constantly the quality of the tone. With forty layers so placed we have obtained remarkable augmentation. Hence we believe that it is only a matter of physical construction to augment sound propelled through these membranes almost indefinitely.

That they (sounds) can be made remarkably pure is easily

demonstrated, thus proving that when sounds are in unison and in the same phase they lead to reinforcing each other. We will not at this juncture further discuss this, but proceed to review other matters. Not the least point in connection with this subject is the power of the superimposed membranes to truthfully record and interpret sounds transmitted through them. The recording and interpreting medium must have the same relative condition and physical composition as the organ of hearing. The wonderful capacity and construction of the *membrum tympanum* must be imitated as faithfully as possible in order that sound may be truthfully interpreted. This we do not believe can be done with metal, glass, hard rubber or other single element. While we can make loud reproductions with dried animal membranes, silk, etc., yet we believe that moisture is an essential element in the perfect recording and reproduction of sound. Any medium used in transmitting sound, in order to transmit truthfully, must have the same relative conditions of structure. The *membrum tympanum* will not interpret sounds other than its structure determines, nor can an imperfect medium transmit and record sound other than its structure determines. Hence in the construction of sound boxes used either by the physician in physical diagnosis or in recording and reproducing sound, as in phonographs, etc., a similarity in structure and construction must be used. The combinations arising in the transmission of sound when elements of definite and unvarying composition enter into their somatic construction, can only have limited and circumscribed range. Glass, metal, mica and other fixed forms are incapable of transmitting the purest of quality. Such diaphragms may have loudness but are imperfect in all the elements constituting "quality." Now, in the use of animal membranes, combinations, composition and arrangement are virtually endless. It is an easily demonstrable fact that many combinations to which animal membranes are susceptible, present to even the most obtund almost every element which constitutes "tone quality." Thus, for instance, in the construction of a sound box used either for recording or reproducing sound it can be modeled in such a manner as to evince decided truth or quality in almost any tone of the scale note.

The manner in which the membrane is treated is susceptible to the entire range of chemical substances, that is, the influence of these chemical substances when the membrane is impregnated with them have influence not only in loudness and pitch but decided quality effect. In our experiments with the chlorides of various metals it was demonstrated that they (these chlorides) have a positive and undoubted influence upon any element of tone. Thus, a solution of chloride of gold, 20 grains to the ounce of water, applied to each membrane when making a diaphragm for the sound box of the phonograph, accentuates the base notes and soften tones generally, the same is not true with silver, owing to its highly escharotic character, but makes a membrane more in the treble. The chloride of platinum seems to deaden these membranes, and like the metal, is a poor tone portrayer. The chlorides of tin, aluminium, nickel and copper accentuate the treble clefts, while barium and cadmium seemingly little influence, but the chlorides of strontium and uranium offer promise, as they certainly soften all tones.

The influence of various oils upon these membranes, likewise presents points of undoubted value, for when these membranes are impregnated with the different oils, they carry out the essential factors demonstrated in the application of the chlorides, the lighter oils giving lighter tones. Glycerine is among the most perfect tone givers, whilst a properly mixed solution of liquid glass seemingly obtains the best results in tone transmission.

Again, the application of various powdered substances between the membranes all modify tone more or less, whilst mercury produces a decided resilient result. Naturally the character of membranes modifies quality, loudness and pitch; it can be stated as a general truth that membranes retaining their muscular fiber have the broadest and best power of vibration. Gold-beater's skin, animal bladder, the muscular coat of the intestine, the tunica albuginea testis and the pericardium of the animal, under proper treatment, make good transmitters and sound-producers, but are not equal to the membranes above-mentioned.

By the placing of different layers of animal membrane,

silk, linen, cambric, etc., loud sound boxes can be constructed. But dry elements used in the construction of these sound boxes have limited scope in quality. Moisture is an essential in the construction of a sound box in order to obtain the best "quality." From what we have said thus far it can be seen that it is a truth that sound is augmented by the placing of a number of layers of membrane one upon another, and that their arrangement, treatment and condition admit of unlimited range and are unlike definite and unvarying materials, like glass, mica, metal, hard rubber, etc.

From experiments thus far made we believe that it is only a mere matter of time, and a very short time at that, in which every element of quality can be truthfully recorded and reproduced. We believe that the voice of a celebrated singer, the voices of the world's geniuses, the artistic effort of celebrated musical performers, in terse and truthful quality of sound, can be recorded and reproduced. For, as above-stated, the combinations to which these layers of animal membrane are susceptible, possess in themselves the power to express the full scope and purity of quality in tone. We believe that we can so arrange and treat these membranes, tissues and fabrics as to record the soprano voice as easily as any other voice, and that the seemingly intangible quality in violin music can be perfectly recorded. If it can be shown that animal membranes, etc., by a number of layers, manner of position, condition of membranes, have the power to change their character by the application of chemical substances, the influence of substances between the layers, and the mechanical construction and arrangement, all influence quality; then certain it is that a combination can be made which will truthfully interpret every characteristic or element of quality submitted to it.

After two years of experimentation we have demonstrated that each individual voice can be recorded and reproduced in the best elements of "quality." In physical diagnosis the physician has not been able, with the means at command, to have any standard of comparison by which he could determine whether or not the quality of a heart beat or a lung r le is correct as Nature makes it. Now, taking for instance, a given number of layers of animal membrane and putting them on

the sound box of a graphophone you can determine the capacity of this diaphragm (composed of this given number of layers), to determine its capacity in the interpretation of quality as shown on the graphophone. Now, put the same number of layers upon an auscultator, which is essentially a sound box used as a stethoscope, a basis is at once established. We do not believe that the true "quality" of heart and lung sounds have ever been made manifest, but with the application of this device hitherto undefinable sound can be shown and made elements of value in pathology, diagnosis and treatment. In any event, a new field is opened up to the investigating physician which may be of great value.

We will, without being too discursive, close by saying that since it is now demonstrated that the juxtaposition of superimposed membranes will augment sound for they (these membranes) obey the law, that when two sounds are in unison and in the same phase, thus reinforce each other; they not only augment but beget quality, in fact, interpret every element in sound, loudness, pitch and quality.

Finally, the writer can demonstrate all of these facts, and we believe, as before stated, that the voice and sound production of the world's great people will be handed down to posterity in comparative perfection and purity. And, additionally, that there is opened up to the physical diagnosticians a new field of sound for his consideration and elucidation.

Christian Science Defined —Mr. William A. Purrington, the counsel of the County Medical Society, New York, in a lecture delivered recently before the class for the discussion of present day problems at the Broadway Tabernacle, defined Christian Science as follows: "Christian Science is the presumptuous assertion that in 1866 God revealed to a chronic invalid—drifting from one physician, one school of medicine, one phase of quackery, to another, as the hysterical do—truth that during long centuries He has hidden from priests, scholars, poets, and even the simple, and gave to her a key to unlock the sealed book of the Scriptures, with the extraordinary result that, to use the discoverer's own words, 'Most of the knowledge I had gleaned from school books vanished like a dream.'"

EDITORIAL.

THE INFLUENCE OF ENVIRONMENT UPON THE GONOCOCCUS.

Ever since Noeggerath made the sweeping statement that gonorrhea, both in the male and in the female, was a lifetime affliction, and had pointed out the important part played by the diplococcus of Neisser in the etiology of inflammatory conditions of the female genitalia, that organism has been the subject of much study and observation on the part of scientific investigators.

Recently, a new theory has been advanced regarding its evolution and life-history, which is in accordance with that of Darwin on the "Origin of Species." According to Bumm (*Veit's Handbuch der Gynak*, Bd. 1), a highly scientific investigator and prominent gynecologist, of Basel, Switzerland, the specific characteristics of the gonococcus did not exist *ab initio* but, like those of other organisms, have been acquired in the process of evolution, the result of a more or less intimate association with mankind for many years. By passing a culture of the gonococcus through a number of media, one after another, Bumm has been able to obtain a culture in which the virulence has become so attenuated and its specific character so slight that only a mild and transient attack of gonorrhea could be induced by inoculation. He reasons, therefore, that, sooner or later, by modified culture methods it may be possible to take away from this organism its specific character and reduce it to the ranks of a simple pus producing germ.

The theory regarding the acquisition of its pathogenic properties by the gonococcus which he deduces *post hoc, propter hoc*, is interesting could it be proven to be correct. The growth of its disease-producing powers and its harmful possibilities in the process of evolution would be in accordance with the statement of Darwin that in the struggle for existence, variations in form and characteristics, however slight and

from whatever cause proceeding, if they be in any degree profitable to the individuals of a species, in their infinitely complex relations to other organic beings and to their physical conditions of life, will tend to the preservation of such individuals and will generally be inherited by their offspring. This being true it is possible that in an early period of its existence, prehistoric when compared to man, other parasites may have pre-empted the choice locations or have been of sufficient power to have compelled this diplococcus to seek the epithelial lining of the urethral canal or membranes of similar structures and to exist there under adverse circumstances. That it has succeeded and has developed characteristics which render it one of the most resistant and most tenacious of bacteria pathogenic to man, the youth of our land can well testify.

In regard to plants and animals (and by analogy, the gonococcus may be regarded as amenable to the same laws, for it belongs either to the animal or vegetable kingdoms). Darwin further says that we may safely infer that not one living species will transmit its unaltered likeness to a distant futurity, and of the species now living, very few will transmit progeny of any kind to a far-distant futurity.

If Darwin's law is applicable to the lower as well as to the higher forms of cell life, this organism is undergoing a constant evolution which will either increase or diminish its virulency. But Darwin was probably not acquainted with this member of the body politic or else he had not studied it from this point of view, for the accumulated evidence rather refutes the idea of a change in its characteristics.

The experiments of Bumm merely show the effects of changed nutritive conditions upon this organism, which effects do not necessarily prove an atavistic tendency, since the conditions are artificial and not natural and, consequently, may never have played a part in the life history of the organism.

According to Tyndall the strength of the doctrine of evolution consists, not in an experimental demonstration (for the subject is hardly accessible to this mode of proof) but in the general harmony with scientific thought.

The possibility of reducing this organism to a simple pus-producing germ may be reached artificially by modified culture methods, but

that such may result from the conditions under which it exists in Nature is too improbable to be seriously considered. Bumm overlooks the part played by the resisting power of the human organism to bacterial invasion, greater in some individuals than in others, and to a condition of comparative immunity conferred in a measure by repeated attacks. These, as well as the virulence of the infecting germ, influence the course of the disease.

Bumm's experiments are of no practical value in the prevention or elimination of this disease from the category of those which afflict mankind, owing to the inability to control the infective supply of the germs.

On the other hand it is a well-known fact that the characteristics as regards growth, toxicity, etc., of an organism are very largely modified by the presence of other organisms, and the association with it of other bacteria antagonistic to this diplococcus may so far alter or neutralize its virulency as to reduce it to a condition in which it will have little more than an irritating effect. It is along these lines, by means of inoculation after a gonorrheal infection, that it may be possible to avoid the injurious effects of the disease and cut short its progress.

The diplococcus of Neisser has been in possession of its pathogenic faculties probably since the advent of man. It has been an unwelcome companion of the human race through the vicissitudes of its lengthy existence, and will doubtless continue, until science finds a way to aid Nature to accomplish its complete elimination, but we fear that when the gonococcus loses its virulent potency we, as a race, will be in the sere and yellow leaf, and that the millenium will be at hand.

THE INCREASING FREQUENCY OF CANCER.

With the increase in the number of population and the changing conditions of life resulting from the varying influences in the struggle for existence, it is not surprising that there should be found as a result, an increase in the frequency of certain diseases and a correspond-

ing decrease in number, of others. The decrease is due to an elimination of the conditions which favored their propagation and this has been brought about by an increased knowledge and application of hygienic and sanitary science. The true cause, however, of the increase in frequency of certain others, as cancer has not been determined, and it is only within a short period of time that the attention of the profession has been called to the rapid increase in the number of deaths from this disease. This may have been overlooked for the reason that sufficient time had not elapsed in the collection of vital statistics by cities to afford reliable data for comparison.

This increase appears to be the result of conditions caused by a higher degree of civilization than that which formerly obtained, and in this respect Bryant, of New York, (*ST. LOUIS COURIER OF MEDICINE*, February, 1900) and Massey, of Philadelphia, (*American Journal of the Medical Sciences*, February, 1900) have shown that the statistics in America reveal a like condition to that of England and Wales, where the ratio of the mortality from cancer had almost exactly doubled during the thirty-one years preceding 1895.

The combined mortality records for cancer of the seven largest American cities, exclusive of Chicago, whose records were considered to be of too recent date to be valuable for the purpose of comparison, gave, in 1870, 35.4 deaths per 100,000 living persons. In 1898, there were in the same cities 65.4 deaths per 100,000 living persons, showing that the ratio of cancer deaths to the living inhabitants of these cities had almost doubled in the comparatively short time of twenty-eight years.

The greatest increase has occurred in the city of San Francisco; here the ratio has increased from 16.5 to 103.6 cases in 100,000 population in thirty-two years, which is more than six fold. In Boston the number of persons afflicted with this condition had trebled in twenty-four years previous to 1887. These figures have been obtained from registration returns of the cities mentioned and are official.

Cancer has been considered, largely, as a disease of civilization, and that it is not a common affection among the less civilized and barbarous nations. This, however, may be due to the fact that it is impossible to obtain reliable information to disprove this assertion. **I**

contrast with this, Massey makes the statement that there is relatively a greater number of cases of cancer in rural than in urban districts. If this is true, it is not in harmony with the opinion that this disease is a result of the effects of civilization, for the greater proportion of cases should, therefore, be found in cities.

Whether the increase in the frequency of this disease is due to an increased activity on the part of its specific cause (which is at present unknown) can not, of course, be stated. Newsholm believes that the increase is not a real but an apparent one, due to more accurate means of diagnosis and more careful ascertainment of the causes of death; while Andrews, of Chicago, contends that no allowance has been made for a lessened mortality of young people which has been brought about during recent years in most civilized countries. It is possible that this might give rise to a slight increase in the proportion of a disease of maturer years which has not been prevented or cured, but this influence is doubtless too insignificant to be seriously considered.

The fact, nevertheless, remains, that there has been, in recent years, a marked increase in the number of persons afflicted with this disease. Massey estimates the number of deaths from this disease in the year 1898 to have been 49,800, and since the duration of cancer is from one to two years, double the number of persons must be afflicted with it, to the number of those who die from it; he, therefore, places the number of victims of it, at present in the United States, at 100,000.

It is difficult to come to a proper realization of these facts and to grasp the significance of the condition which they reveal. We are inclined to the opinion that Massey's estimate regarding the total number of those thus afflicted is too great, but it will serve to call attention to a condition which we hope will stimulate efforts to discover the cause of the disease and also that of a curative substance, an antitoxin, if needs be, which will combat its progress.

THE MEDICAL ASSOCIATION OF MISSOURI.

The forty-third annual meeting of the Medical Association of Missouri, recently held at Mexico, Mo., was one of the best in the history of the Association. The attendance was large and the papers, on the whole, were excellent; the utmost harmony and good-will prevailed, and the meeting was enjoyable in every respect.

The report from the officers of the St. Louis Medical Society regarding the condition of that body and its relation to the State Association was accepted without a dissenting voice, and its delegates were unanimously admitted.

The report of the Committee on Medical Legislation was adopted without change, and a new committee, consisting of Drs. E. L. Priest, of Nevada; D. C. Grove, of Marshall; A. W. McAlester, of Columbia; Frank J. Lutz, of St. Louis, and H. E. Pearce, of Kansas City, was appointed to have charge of the bills for the purpose of securing their enactment by the State Legislature.

Officers for the ensuing year were elected as follows:

President, Dr. U. S. Wright, of Fayette.

First Vice-President, Dr. D. C. Grove, of Marshall.

Second Vice-President, Dr. J. R. Fritts, of Mexico.

Third Vice-President, Dr. R. S. Kelso, of Joplin.

Fourth Vice-President, Dr. Thomas Chowning, of Hannibal.

Fifth Vice-President, Dr. F. E. Murphy, of Kansas City.

Recording Secretary, Dr. Bennett C. Hyde, of Kansas City.

Assistant Recording Secretary, Dr. W. A. Braeklein, of Higginville.

Corresponding Secretary, Dr. C. R. Dudley, of St. Louis.

Treasurer, Dr. J. F. Welch, of Salisbury.

Jefferson City was chosen as the place of meeting in 1901.

A musical entertainment by the students of Hardin College, on Monday evening, and a banquet at the Windsor Hotel, on Thursday evening, were among the pleasant social features of the meeting.

SOCIETY PROCEEDINGS.

ST. LOUIS MEDICAL SOCIETY.

*Meeting of April 7, 1900; Dr. Robert M. Funkhouser,
President, in the Chair.*

Chronic Neuclear Ophthalmoplegia.

DR. JAMES MOCRES BALL presented a patient with chronic nuclear ophthalmoplegia in which there was complete paralysis of all the muscles supplied by the motor oculi nerve in each side, with spastic contraction of the internal rectus, complete ptosis on the right side, partial ptosis on the left. The only muscles retaining their functions were the superior obliques, supplied by the fourth nerve. Vision in the right eye was $\frac{20}{100}$, in the left eye was $\frac{40}{100}$. The back part of the eye appears normal on ophthalmoscopic examination, the pupils were immobile and contracted.

DR. A. E. MINK diagnosed the condition as chronic nuclear ophthalmoplegia, and said that the term was used in two different ways—internal ophthalmoplegia, where there is a paralysis of the sphincter muscles of the iris and also the ciliary muscles; external ophthalmoplegia, where the external muscles of the eye are paralyzed. There are several pairs of nuclei in the fourth ventricle which give rise to the motor oculi nerve, and the most anterior of these nuclei are known to be governors of the ciliary muscle—the muscles of accommodation and the sphincter muscle of the iris. In a great many cases of ophthalmoplegia of the chronic neuclear type, such as this, the muscles of the iris and of the ciliary muscle remain uninvolved, and sometimes the fourth nerve or the nuclei which give rise to the fourth nerve, is involved. However, such is not the case here; this is a mixed type of nuclear ophthalmoplegia, chronic in character, the type that was first pointed out by Jonathan Hutchinson, in England, in 1881.

Wernicke, in his great work on "Brain Disease," describes an

acute poli-encephalitis superior, where there are symptoms of cerebral disturbances, with convulsions, delirium, headache and elevation of temperature, with involvement of the motor oculi nerve.

This is a very interesting case, inasmuch as they are very rare, and it shows the relation of neurology to ophthalmology. The patient has no signs at all of any cerebral disturbance outside of that which is also characteristic of this disease. He has no headache, no vertigo, no disturbance of the pulse, no symptoms which would be indicated in cases of general cerebral disturbance, and he also has no symptoms focal in character, and for that reason he diagnosed the case as one of chronic nuclear mixed ophthalmoplegia. One of the things which enables us to make a diagnosis in a case of this kind is the fact that it is bilateral in character, and the fact that although the motor oculi nerves on both sides are completely involved (and this is not the rule where we have any basal disturbance—as in syphilitic basilar meningitis, where we usually have an unilateral ocular motor palsy). In syphilis we may have this same type of nuclear ophthalmoplegia.

This case is interesting again, inasmuch as it is frequently associated with bulbar palsy, just as bulbar palsy is associated with progressive muscular atrophy. This patient suffered first with diplopia; that is another characteristic of chronic ophthalmoplegia. After a while he accommodates himself to the diplopia, and that enables him to suppress one image, so that after a time he sees only single. His condition is progressive and the prognosis is very unfavorable. He thought, however, that with proper glasses, etc., he can be greatly benefited.

There are various kinds of ocular palsies of central origin; for instance, there is the conjugate deviation with cortical disease, and in capsular hemorrhage. Basal palsies are very common in cases of tubercular meningitis, for instance, where the base of the brain is largely involved with tubercular deposits. The abducens is usually affected in cases of this kind and we get convergent strabismus. This trouble is due to the fact that the abducens pursues the longest course inside the cranium before it passes through the sphenoidal fissure. The abducens is involved frequently in syphilis and cerebral tumors, especially of the cerebellum.

This question of ocular palsy is a most complicated subject and one of the most interesting in the domain of neurology; it simply shows how complicated cerebral lesions can be and how complicated the palsy can be. The great Albrecht von Graefe was taken through the London Hospital for the Paralyzed and Epileptic, and was shown a case of ocular palsy and asked to diagnose the trouble. He said I can tell everything that it is not but can not tell what it is.

Frequently we have ocular palsies associated in such an inextricable manner that, until lately, they were undiagnosable or rather unlocalizable. He thought the enormous advances made in cerebral anatomy would enable these lesions to be diagnosed with greater accuracy than ever before. A good many peripheral palsies are located outside of the sphenoidal fissure—of extra cranial origin, as in the orbit; palsies of the orbital tumors and of so called rheumatic origin, which is probably a term to cover up ignorance. A great many of the rheumatic cases, if watched, will, later on, develop into multiple sclerosis, or tabes dorsalis, or some one of the chronic diseases of the brain or spinal cord, and it shows that a so-called rheumatic eye palsy is probably of a more significance nature than is ordinarily supposed.

DR. W. B. OUTTEN read a paper (see page 358 this number) on the

True Interpretation of Certain Sounds in Physical Diagnosis.

DISCUSSION.

DR. WILLIAM PORTER had been able, through the kindness of Dr. Outten, to experiment with this instrument, which promises an advantage over the stethoscope; one of the instruments was very fine, with it he could differentiate the sounds and get the characteristics of each sound better than he had been able to with any other instrument.

He had experimented in cases of aortic aneurism by passing a large wooden olive down to the point opposite the site of the aneurism and trying to estimate the conducted sound. A wooden disc, like the old-fashioned stethoscope, was fastened on the end of the rod connecting the olive, and Dr. Outten's auscultator applied to that. He could hear the bruit very plainly and more distinctly than through the

chest wall with the most delicate stethoscope at his command. Dr. Outten has promised to attach the same material to the end of a bougie that can be passed in the same way, and thinks that the sound may be conveyed even better.

He believed that this was the first attempt to auscultate the heart and aorta through the esophagus, and thought that there was much to learn from it. One fault with most of the instruments for auscultation is that they amplify but do not define. Dr. Outten's auscultator gives good definition; he is certainly entitled to the credit of the discovery of the transmission of sound through layers of tissue separated by spaces. An echo repeated from one side of a canyon to the other will often gather force, and it may be that this is the same effect, in miniature, the layers of tissue separated and parallel transmitting the sound, each with added force, to the sound-wave.

DR. I. N. LOVE had used one of the auscultators and appreciated the advantage of it. Dr. Outten had certainly demonstrated the ability to amplify sound by the multiplication of membranes, placing them so as to leave spaces between them, which he thought would be of great practical benefit, in that it would enable our ears to hear sounds which previously were outside of their ability to detect.

DR. ROBERT FUNKHOUSER felt that great credit was due Dr. Outten and he believes something will develop from these experiments.

The difference in tone-pitch produced by this device is very marked, and there is no doubt that his device does amplify the sound and produces better definition. It was a subject, however, that one can not formulate any positive conclusion with regard to its utility and application until further experiments have been made.

DR. ROBERT BARCLAY said that the main difficulty has been that all membranes have their fundamental note and are susceptible of sympathetic vibration. It is exceedingly difficult to eliminate this quality of the membranes which enters into the case, not only in the transmitter where the sound waves are first taken from the atmosphere and then into the instrument, but also upon the receiver at the other end, which passes them over again to the atmosphere or through the solid tissue of the head to the human ear. The modified membrane that we have here will bring out the low tones—the tones in the lower

octaves, and will lower the tone limit of the instrument. The difficulty in the transmission of sound when passed through solid bodies, is that the lower tones are first interfered with—that is seen in deafness of the human ear due to immobilization in the transmitting or conducting mechanism of the ear. The lower tone limit is always elevated; the first sounds which are cut off in a diseased condition of the ear, are those of the low octave, and it will pass upward the more immobilization there is. With this instrument those lower tones can be heard; it is, therefore, a better conductor, as it will conduct a lower range of sound, through the new construction, the personal or particular vibrations of the membrane are eliminated. This is a basic discovery, it is fundamental, and it is one of exceeding importance.

The possibility of using this instrument not only for increasing the volume of the sound but of getting a more distinct and true reproduction of the original sound passing out through the instrument, will not only be of vast value in aiding the hearing of those whose hearing is normal, but also those who are deaf.

He had endeavored to invent an instrument by which the sound-waves from the air could be transformed into electrical waves and which in turn would set up molecular vibrations in a solid body, hoping thereby to be able to transmit sound to the auditory nerve through the bones of the head. He succeeded in making an instrument which, when held between the teeth, enabled one to hear about as well as through an ordinary telephone receiver. He was unable to perfect the reproduction of sound, owing to the personal vibration of the membrane used in receiving and transmitting sounds.

DR. A. H. MEISENBACH asked if a diaphragm could be made which will give the variations of accent and intonations of the human voice, as the voice is spoken into the instrument.

DR. OUTTEN replied that the reproduction of the sounds by the graphophone depends upon a single glass disc which is 1-10,000 of an inch in thickness. This glass has its individual tone, so also has mica; by the use of a character of substance, silk or animal fibers, whatever may be required, a combination can be produced which will reproduce the sounds exactly, but it may require a great many experiments to

accomplish this, and he is satisfied that someone would discover a combination which will perpetuate the human voice exactly.

He had experimented with the human drum-head, but was unable to keep them from shrinking; if it could be kept intact, it would be perfection.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of March 1, 1900; Dr. Chas. J. Orr, President,
in the Chair.*

DR. GIVEN CAMPBELL read a paper (see page 343 of this number) entitled

Peroneal Muscular Atrophy; Presentation of Patient.

DISCUSSION.

DR. CHAS. G. CHADDOCK was very much pleased to see so interesting a case; these cases are not seen very often. The case was interesting, too, because the pathology of this condition was not thoroughly understood. As stated by the essayist, the condition was first described by Charcot and Marie in 1886. They gave a complete description of it clinically, but at that time no autopsy had been made. From the symptoms they were able to discover, they were led to believe that the disease was a slowly progressive change of the motor cells of the anterior horns of the cord. The same year Dr. Tooth reported cases practically the same as far as the clinical manifestations went, but he made an autopsy and stated that the condition found were those of chronic peripheral neuritis. Following this, a German observer reported cases, and he, too, having made some autopsies, declared the condition due to a chronic interstitial neuritis of the peripheral nerves, and further investigations showed that there were lesions of the nerves, of the cells of the anterior horn, and of other parts of the cord. Later, Marinesco had an opportunity to examine one of the original cases seen by Charcot and Marie, and he found the lesions in the nerves, in the anterior motor cells, and in the cord. There was atrophy of the

anterior motor cells and sclerosis of the posterior columns of the cord. In connection with the case referred to by Dr. Campbell, another case was carefully examined by Dr. Marinesco, and the same condition was found to exist, except that there were no lesions of the nerves attributable to a primary involvement of the nerves themselves.

This disease is familial, usually, and the muscular atrophy is most pronounced at the periphery, diminishing toward the roots of the limbs. One noteworthy lesion found is atrophy of the posterior roots of the cord ascending into the posterior columns. For this reason the condition seems to approach, from a pathological standpoint, another rare disease of which a few cases have been reported by Dejerine, namely, interstitial hypertrophic neuritis. In these cases which are familial, there seems to be a chronic interstitial involvement of the peripheral nerves, with hypertrophy, diminishing from the periphery toward the cord, with no involvement of the cord except the posterior roots and columns; the anterior horns are not implicated. There was probably no connection between the two conditions however. The German idea to-day of this type of peroneal atrophy is that there is a combined primary degeneration of the peripheral nerves and the motor cells of the cord. He did not see how it would be easy, pathologically, to establish such a condition; that is, to attribute part of the atrophy to the cord lesion and part to the neuritis, to determine what was primary and what was secondary. He was sorry he could not bring some new facts bearing on the cases, but felt that with a disease where so few cases had been observed it was difficult to offer anything new.

The arrest of the atrophy at the knee or lower third of the thigh in the lower extremity, and at the elbow in the upper extremity, he said was a peculiarity that could not be due to a nerve lesion. He thought the only way to explain this was on the theory that the cord has independent trophic centers, of metameric nature; that is, centers that exercise a trophic influence over segments of the extremities, and the destruction of which causes segmental atrophy of muscles, as seen in this type of atrophy, in springomyelia, and in some cases of hematomyelia.

DR. ERNST SAXL said the patient had been referred to him on account of some visual trouble. An operation had been per-

formed on one eye about four years ago by a physician not now in the city. The other eye gave him considerable trouble and at that time he consulted another physician, who gave him atropine and dilated the pupil. The marginal part of the lens that is not clouded allows a very fair vision. The condition prompted him to refer the patient to a nerve specialist, as he thought the peculiar combination of cataract and atrophy of the muscles was a rare form. He was not aware that the condition of the muscles was such a rarity in themselves as he thought it probably due to a trophic disturbance in the posterior horns of the cord. On examination of the optic nerve, however, he found it pale and in such condition as to suggest a disease probably of the spinal cord, involving first, the eyes, second, the hearing, and third, the muscles of the leg. For this reason he hesitated to operate upon the patient, especially as he did not attribute failure of the former operation to lack of skill of the operator, but to the condition of the nerve centers of the individual. He felt that if he performed an iridectomy and the case did not turn out as well as he expected he would have blamed himself for not waiting to obtain the opinion of competent neurologists upon the nerve condition. After having heard the paper of Dr. Campbell on this case he felt that he would be perfectly justified in performing iridectomy.

DR. CHAS. SHATTINGER said that for a long time a number of unrelated cases were classed under the same category, namely, progressive muscular atrophy. With our advanced knowledge it has been found that that which hitherto has been regarded as one disease really constitutes several diseases. German authors make two definite distinctions regarding progressive muscular atrophy, namely, a progressive muscular dystrophy and progressive muscular amyotrophy; this case probably belongs to the latter class—progressive muscular amyotrophy. There is no question about the rarity of the condition, namely, beginning in and involving the lower extremity, and later, to a less degree, the upper extremity, because this variety which the Germans call progressive muscular amyotrophy nearly always begins in the upper extremity, the first signs usually being seen in the hand—the ball of the thumb. In their reports, however, they mention the fact that this disease has been known to begin in the feet instead of the upper extrem-

ity. From the descriptions given he failed to see any distinctive difference between this "Charcot-Marie" type and the progressive muscular amyotrophy of the Germans. The pathology is the same, because in those cases where the disease began in the upper extremity there was found atrophic conditions in the motor nerves coupled at times with changes in the motor nerve cells together with secondary changes in the muscles, trophic and degenerative. Clinically, too, there is no difference in the two types. There is the slight difference in this case in that the disease first manifested itself in the lower extremity instead of in the upper extremity. Most of the cases described by the Germans as progressive muscular amyotrophy do not display a hereditary feature. Quite recently, however, a case was reported in which a distinct hereditary tendency was shown. Even the degenerative changes in the posterior horns are occasionally present when the disease begins in the upper extremities. The point of distinction is this: There are two kinds of progressive muscular atrophy—one of the muscles purely, and one of spinal origin. Whether the latter variety manifested itself in the upper or lower extremity he did not think would make any essential difference in the disease. He asked Dr. Chaddock the difference between this type and that cited by him as what the Germans call progressive muscular amyotrophy consisted in an involvement of the posterior part of the cord, and if so, were the two post-mortems to be considered conclusive in making this distinction. Also whether it was not a fact that sensory disturbances, though extremely rare, have sometimes been found in cases of progressive muscular atrophy of spinal origin.

DR. CHADDOCK said that the two forms of muscular atrophy referred to were well known; that this type of atrophy was not to be regarded as a mere variety of ordinary progressive muscular atrophy, because, in such cases, in addition to the lesion of the cells of the anterior horn of the cord there had been found lesions of the posterior or sensory portion of the cord, whereas in progressive muscular atrophy of ordinary type, whether it first manifested itself in the upper or lower extremities, there was simply lesion of the second motor neuron beginning in the cell. It might be urged that the lesion of the sensory side of the cord in these cases was accidental, and that the degeneration of

the anterior motor cells was essential; but this idea could in no way detract from the distinctness of the type as a clinical and morbid entity. If such distinctions as the differentiation of this type of muscular atrophy were not made, we should be compelled to abandon some other distinctions that have been made but which were formerly grouped under the general heading of progressive muscular atrophy. The involvement of the pyramidal tracts in cases of amyotrophic lateral sclerosis is regarded as sufficiently important to distinguish this type of muscular atrophy from the ordinary progressive form, and for the same reason the Charcot-Marie type deserves to be regarded clinically and pathologically, as far as a localization of the lesions is concerned, as distinct. Both German and French observers recognize the Charcot-Marie type of atrophy, but all observers are not in accord as to the pathological findings. Some of this confusion is doubtless attributable to the fact that in this clinical type there is probably more than one pathological condition. The subject of muscular atrophy, due to chronic peripheral neuritis, is one that is still under investigation, as is amply proved by the cases of so called hypertrophic interstitial neuritis described by Dejerine, and in which, along with peripheral lesions, there are lesions of the sensory side of the cord. The utility of such a clinical and pathological distinction as this is shown when it is recalled that in the group of progressive muscular atrophy were formerly confounded Charcot's disease and syringo-myelia, and when we remember that progressive muscular atrophy of spinal origin has become a rare disease owing to differentiations that modern pathological research has made possible. It is not impossible that one day the muscular dystrophies which, since their differentiation have been reported as independent of the nervous system, will be found to depend upon disease of the nerve centers. There is a growing inclination to regard these myopathies in this light. When all the various forms of these familial degenerative nervous processes are considered, we find much similarity between them, and they must all be attributed to inherent imperfections of organization of the nervous system which limits, as it were, the functional life of one part or another of the nervous elements.

This case naturally called to my mind, both clinically and pathologically, that type of hereditary ataxia known as Friedreich's disease.

In this case the fact that the muscular atrophy was associated with trouble in the eyes, and defect of the auditory apparatus, was interesting. It was conceivable that the cranial involvement here manifest was part and parcel of the degenerative tendency manifest in the peroneal atrophy; but that up to the present time such association of cranial and spinal involvement in this type of disease has not been recorded. There had been now several autopsies in this type of atrophy, with fair conformity in the findings, and the type, if it could not be spoken of as firmly established pathologically, was at least thus far clinically distinct. The possibility of peripheral neuritis bringing about this distribution of atrophy should be considered, because there were doubtless cases in which the lesion was of this nature and showing more or less conformity clinically with the type under discussion.

DR. CAMPBELL thought the way to differentiate the two types is along the lines mentioned by Dr. Chaddock—that the disease is different both clinically and pathologically. Clinically, in that the sensory disturbance is part of the peroneal atrophy and only incidentally connected with spinal atrophy. And, furthermore, that the atrophy does have limitations along trophic lines stopping above the knee and elbow. It is a type of the disease to have this limitation in the peroneal disease and there is no such disturbance of the atrophy in the spinal disease. They are different pathologically in that the spinal disease does not show changes in the posterior part of the cord; in this disease—the peroneal form—these changes do occur. Strictly speaking, he thought the peroneal type ought not to be called a muscular atrophy; some other name ought to be applied to it. In his opinion, the disease did not consist merely in motor changes in the periphery nerves, but the changes were changes in the cells of the anterior horn connected with changes in the posterior column.

Subclavian Aneurysm; Aneurysm in General.

DR. J. B. ROSS, discussing the histologic aspects, said Peugniez read a paper on this subject at the last medical congress in Europe. In this paper he stated that arterio-sclerosis is not a cause of aneurysm but simply a favorable ground for its occurrence, the real cause being

infective disease. Peugniez had four cases in which he operated and made microscopic sections. In each case he found pathologic changes in the media. Before this a Russian physician published a paper on the same subject. He had made extensive examinations of several specimens and also found pathologic changes which had the characteristics of arterio-sclerosis. One point brought out was that the elastic fibers before showing any symptoms of microscopic degeneration had already lost their chemical affinity. As soon as arterio-sclerosis commences there is stenosis. It was also found that in arterio-sclerosis there is a formation of elastic fibers in the intima and a disappearance of the elastic fibers in the media.

One question must be taken into consideration whenever the pathology of aneurysm is discussed and that is the origin of the lesion. Dayem brought this out very clearly when he pointed out the idea of infection, saying that in all aneurysms caused by sclerosis there is a breaking down of the external lamina and the internal membrane which is not due to the sclerosis but is found in all cases. For instance, if an aneurysm is caused by syphilis, the anatomical process is different from the case of sclerosis. Syphilis and tuberculosis have, in common, the formation of the small cells which have a tendency to break down and leave a place that under favorable circumstances will form a starting point for aneurysm. One interesting point is that Drmitrijeff speaks of having found a fine network of elastic fibers in the aneurysmal intima. The speaker said he had examined many normal arteries but had never found this network in the intima. In regard to the organization of thrombosis, he said a paper was published by Cornil on the subject and the author gave illustrations and pointed out that the organization of thrombosis takes place from the intima. At the same time connective tissue forms and fibrin forms a small network.

DR. CHAS. SHATTINGER warmly advocated the electrolytic method of treating aneurysms. The procedure is simple and can be carried out by anyone accustomed to using electricity. It consists in simply introducing into the aneurysmal sac a gold needle which is in connection with the positive pole, while in the neighborhood of the aneurysm is placed a sponge electrode connected with the negative pole, the current being turned on gradually and ranging in strength from 10 to

30 milliamperes. Quite a number of cases have been reported, in the majority substantial relief was afforded. It is a method practically free from danger. The one danger that seems possible at first thought is that of embolism and this has not yet occurred in any case. The method is applicable to the aorta. In regard to this vessel, he said there has been no case of complete cure as yet obtained any more than such success has followed other methods. In the cases where it has been tried, the life of the patient has unquestionably been prolonged. The condition of the patients became such as to indicate that it might be possible to achieve a permanent result in some instances. In a condition which is considered almost absolutely hopeless, so far as our present knowledge goes, this method, which at least prolongs life and lessens suffering (some patients even having been enabled to attend to ordinary duties where before they were bedridden), is certainly worthy of trial.

DR. L. H. BEHRENS believed the early recognition of the condition would do a great deal for the medical and surgical treatment of the trouble. The diagnosis of aneurysm is not difficult in late cases, and if seen early something may be done for the patient.

*Meeting of March 15, 1900; Dr. Chas. J. Orr, President,
in the Chair.*

Case of Cyst of the Free Margin of the Vocal Cord.

DR. GREENFIELD SLUDER reported a case of cyst of the free margin of the vocal cord. The condition is one of decided rarity. In the literature very few cases of cysts about the larynx are reported, and a cyst of the free margin of the vocal cord, where there are no glands to produce a retention tumor, is exceedingly unusual.

The patient, a healthy man, 32 years of age, had consulted him because of hoarseness, which had lasted two months. Upon listening carefully, this hoarseness could be made out composed of two notes corresponding to the striking of two notes upon a piano, the resultant tone being an admixture. There was no huskiness or roughness to the voice. An examination of the larynx revealed a spherical, semi-transparent tumor about the size of a mustard seed situated on the free

margin of the left vocal cord midway between the vocal process and the angle of the thyroid. The larynx was cocainized and the free half or two-thirds of this mass removed with Krause's double pincett. The mass being upon the left vocal cord, it was found more desirable to operate with the left hand to preserve an uninterrupted line of light. The hoarseness of which the patient complained disappeared almost immediately after the operation and did not return. In two weeks the wound had healed. There was some little disposition toward the building up of epithelium at the site. This was combatted by application of 10 per cent. salicylic acid in alcohol (Dundas Grant). The result is seemingly perfect and lasting.

He was unable to find very much in literature on the subject of cysts of the larynx. Schmidt ("Die Krankheiten der Oberen Luftweg," second edition) mentions a cyst of the epiglottic fold. Gottstein ("Krankheiten des Kehlkopfs," 1893) says cysts of the larynx are seldom seen and those found are usually retention tumors of the glands in the sinus of Morgagni from the anterior surface of the epiglottis or the epiglottidean fold. Kanthack describes a cyst, the inner surface of which showed no epithelium and did not show any disease of the gland. Cysts of the free margin of the cord are of this character. Chiari thinks these cysts are a dilatation of the lymphatic vessels or a softening of the connective tissue.

DISCUSSION.

DR. M. A. GOLDSTEIN said there was no question of the rarity of this laryngeal growth. He had found in literature but one case additional to those mentioned by the essayist. This was in the Atlas of Gougenheim and Glober and was a large cystic tumor which sprung from the epiglottis, presented downward, over-riding a large portion of one cord, causing intense aphonia and almost suffocation. It was reported to be a little over one-fourth of an inch in length with a large perpendicular attachment.

The position of the tumor described by Dr. Sluder was also a question of considerable interest. Its position being almost midway between the free edge of the cord and the processus vocalis, it offers an exception in that the restoration of the clear vocal tone was so

quickly effected. If this tumor had been in almost any other position on the free edge of the cord where the distinct musical note was not formed by the vibration and regulated by the nodal point, the natural tone of the voice would not have been so easily restored.

On the free edge of the cord, possibly the most delicate surface in the region of the larynx, very little operative procedure is tolerated, the slightest erosion or superficial laceration causing a disturbance in the voice. For this reason the speaker thought it rather unusual that in two weeks after the pinching off of this little tumor the vocal apparatus should be restored to almost a normal condition.

Recurrence of these tumors in the upper air passages while very rare in this particular area, are not so infrequent in other parts. If the tumor is associated with the deeper structures the chances are that a recurrence can be looked for even in this case. It is possible, in consideration of the pathology of the specimen, and of others in or near the cord at not a very great depth, that in the removal of a small section it might have been taken deep enough to include the normal muscle and perhaps also some of the glandular structure shown in the microscopic section.

DR. ROBERT BARCLAY reviewed the history of the case and said that in all throat cases a very thorough examination should be made, leaving nothing to presumption, so that when conditions such as these are recognized the patient may be placed in competent hands at once and relief offered. The very beautiful demonstration just made of the possible origin and development of these tumors was very instructive, and served to show how, in a person apparently in perfect health, evidences of abnormal development may be found. So far as he had seen or read of this subject, the case seemed to be unique.

DR. CHAS. J. ORR mentioned a case, which he had seen several years ago, showing similar characteristics. It was a cystic tumor of the free margin of the cord situated nearer the vocal process, however, than in the present instance. He was not quick to recognize the exact character of the trouble, and was prevented from securing what might have been a brilliant success in his hands, in operative procedure, by the spontaneous rupture of the tumor. He hesitated, thinking it

was possibly a fibroma. The patient gave a history of hoarseness for months, varying in degree, and increased by a cold; he had no pain, and aside from the hoarseness, was not annoying. He was able to exclude papilloma, tuberculosis, and syphilis, and felt that the condition was not serious. While it is true that there are no glands to develop tumors of this type on the free margin of the cord, he accounted for the condition on the supposition that it might have been a deep-seated gland which had become misplaced and occupied this position on the cord. The patient was under observation for five or six months and was seen a few days after rupture of the tumor. The speaker said he had not even seen an instrument as that exhibited by Dr. Sluder. He had contemplated merely puncturing the tumor. He was under the impression that the tumor was congenital and had developed late or only recently to a size sufficient to cause symptoms of mechanical interference. He thought he must be almost alone in the opinion that the occurrence of these tumors was more or less frequent, but he believed a full investigation would enable him to cite some authority on this view.

DR. SLUDER thought the shape of the tumor was probably rendered oval by the pinching when it was extracted. When attached to the cord it was certainly hemispherical. In regard to the danger of recurrence in this case, referred to by Dr. Goldstein, the speaker said it was now a month less than two years since the tumor was removed and the man has had no return of the trouble. The voice has not changed, is still smooth, and on the cord may be seen only an opaque spot marking the site of the cyst.

*Meeting of April 5, 1900; Dr. Chas. J. Orr, President,
in the Chair.*

Total Extirpation of the Tongue for Carcinoma.

DR. A. H. MEISENBACH showed a specimen of total extirpation of the tongue; an interesting feature was that the tongue did not show from the outside the characteristic carcinomatous degeneration. It had started in some of the glandular structures in the floor of the mouth of a man, 65 years of age. He was in robust health, and mod-

erate in habits; he was accustomed to smoke a pipe, and when smoking held the pipe on the left side of his mouth in such a manner that the stem was pushed down on the floor of the mouth, on account of his teeth being absent in front in the lower jaw. A nodule first appeared under the left side of the lower jaw six months ago and the lump became large and painful. When he first saw the case a few days ago, there was under the left ramus and extending toward the hyoid bone a hard mass, painful upon movement. The floor of the mouth was hard and the tongue bound down so that it could not be elevated by the patient. Some ulceration was found near the frenum, but low down, infiltration was also present on the other side, but not to so great an extent. On the left side the infiltration extended back to the root of the tongue and downward into the triangle of the neck. He could not feel the nodules externally on the tongue, but from the general appearance and history he concluded that it could only be a carcinomatous condition.

A preliminary tracheotomy was made and the anesthetic given through the tube. A combined Kocher and Sedillot operation was thus performed. An incision was made from below the mastoid process down to the hyoid bone and forward to the median line, and a second incision from below the commissure of the lips, through the soft parts and down through the chin, joining the first at right angles; the jaw bone was exposed and the symphysis cut through with a saw, the ends of the jaw bone were spread apart, bringing the field of operation completely under control and the operation completed with the scissors.

In dissecting the left side the lingual artery was exposed and ligated, and a transverse incision was made at the root of the tongue as low down as possible in front of the epiglottis; the lingual artery on the right side was caught with forceps and ligated, so that the patient lost very little blood. The floor of the mouth and the opening into the pharynx and into the trachea were closed by iodoform tampons; the tracheal tube was left *in situ*, and the patient left the table in good condition.

Two things of importance are to be considered, barring, in this class of cases, recurrence of the disease, namely, insufflation pneumo-

nia and sepsis. Where the floor of the mouth is gone and the muscles of the pharynx are partly thrown out of their ability to functionate, it is easy to understand how material might get into the trachea and lungs and cause pneumonia. He usually leaves the tube in until the floor of the mouth has well granulated, and this materially lessens the danger of infection; the patient will thus make a good recovery from the operation at least. The fact of a recurrence or ultimate outcome can not be determined.

He believed total extirpation to be a rational procedure when taking into consideration that death will follow if nothing is done for the patient.

Examination of the specimen showed that the direction of the growth was toward the center; neither the tip nor the sides of the tongue were involved. The sides and base of the tongue are the most frequent seats of development of this disease and he thought it would be possible to save at least a portion of the organ, but so extensive was the growth that total extirpation was necessary.

Specimen of Fibromyoma of the Uterus.

DR. MEISENBACH also presented a specimen of a womb which he had removed by vaginal hysterectomy, containing fibromyomata. The patient, 55 years of age, suffered from hemorrhages which continued after curettement had led him to suspect a malignant condition. The specimen showed several nodules, most of which were submucous.

Multiple Fibroids of the Uterus---Abdominal Myomectomy.

DR. MEISENBACH exhibited another specimen of fibroid of the uterus removed by abdominal myomectomy. The tumor was incarcerated in the pelvis; on opening the abdomen and lifting out the tumor he found a pedunculated fibroid and a number of intramural fibroids, these were also extracted.

DISCUSSION.

DR. NORVELLE WALLACE SHARPE considered the surgical procedure in the first case wise; it showed the great importance of being careful in pre-operative diagnosis and prognosis. One source of recurrence

was due to incomplete and unsatisfactory extirpation methods in these cases; in this particular case there was no doubt that the course pursued was the proper one, there is now a tendency to omit preliminary tracheotomy in many of the operative procedures upon the trachea, larynx, pharynx, superior and inferior maxilla, etc., that have heretofore demanded preliminary tracheotomy. He thought that by placing the patient flat on his back on the table and dropping the head sufficiently far back over the edge so that the blood would gravitate into mouth and rhino-pharynx, tracheotomy might be dispensed with in a number of cases.

The second was an interesting specimen. He did not believe in the extended use of vaginal hysterectomy; for the extirpation of the uterus with intramural, submucous or even subperitoneal fibroids, it is a very good procedure, he did not consider it advisable as a general thing when undertaken for the relief of malignant disease. Extirpating the uterus in this manner would lead one to conclude that unless the malignant process was absolutely limited to a particular and localized area, all the diseased tissue will not be removed, in which case the operation is not curative but palliative. The method up to the present time for the extirpation of diseased tissue in the body or neck of the uterus has been to remove the uterus—neck, body and appendages—entirely. Some operators claim that the adjoining lymphatic nodes and chains in all possible cases should be removed. Kelly believes that the vaginal operation will secure for itself a wider field than in the past; he finds it unnecessary in the average case to extirpate the periuterine glands for the reason that malignant metastases do not extend through the periuterine glands nearly as much as has been supposed; that the point of onset is usually in the cervix and is confined to the cervix for a longer period of time than has been supposed, and that metastasis, when it does occur, extends from the cervix to the body, from the body to the investing peritoneum and from that to the surrounding tissues; so that from the newer and later idea the uterus can be justly extirpated without taking out other tissues.

DR. FRANCIS REDER said the unfortunate feature of this carcinoma was that it started at the base of the tongue. In extirpating the entire tongue Dr. Meisenbach performed the operation indicated in

this instance, because to all appearances it would not have been long until the infiltration would have involved the greater part of the tongue. As to the operative technique, the lateral supra-hyoid method as performed by Kocher, together with Sedillot's procedure of sawing through the symphysis of the inferior maxillary, is probably the best way of getting at the base of the tongue and the adjacent structures; it does away with the ligation of vessels before making the attack upon the organ.

He had seen a number of tongues totally extirpated; one was by the semicircular method, the incision being made along the line of the lower jaw, from angle to angle; the others were removed by the Kocher method. A partial extirpation is more easily accomplished, especially where the growth shows itself at the tip of the tongue or along the margins, because injury to the healthy structures to gain access is not necessary. He thought tracheotomy should be performed before operating for a total extirpation. It ought to be done, first, because the surgeon will not be impeded during the operation by the administration of the anesthetic; it is more convenient to the anesthetizer to give the anesthetic through the tube—in fact, better to do so; and it ought to be done because the operator can better control any blood which might by accident escape into the trachea.

The second specimen shown, that of extirpation of the uterus, is an exceedingly interesting one. The measures advocated by a previous speaker to check hemorrhage would have no effect in this case upon the growth of the tumor—its extirpation would have become just as imperative. The patient was very stout and removal by vagina was the method to be preferred. He asked Dr. Meisenbach if there was any trouble experienced with the rectum.

DR. MEISENBACH replied that he neglected to state that the rectum was torn during the operation.

DR. CHARLES SHATtinger in discussing the specimen of uterine fibroma removed by myomectomy, said he would have tried the method of Apostoli before advising an operation, which if successful will have the desired effect upon the growth itself as well as upon the organ which gave rise to the growth. It works in the direction of an actual cure, or at least a cure as far as the patient desires.

DR. SHARPE explained that in his remarks he did not in any sense criticise Dr Meisenbach's procedure in this case, but rather indorsed the preliminary tracheotomy. He did say that it called to mind the fact that some of the more recent operations upon the pharynx and rhino-pharynx and superior maxilla were being successfully done without the preliminary tracheotomy.

DR. MEISENBACH said the method spoken of by Dr. Sharpe was first suggested by Roser. An operation in this region is one of the most difficult in surgery; he did not know of any region which demanded more skill on the part of the surgeon than an operation about the neck from the chin down to the chest bone; in no region must one have a more thorough knowledge of the anatomy. He had performed operations upon the upper jaw and in the naso-pharynx and in sections of the lower jaw without this preliminary tracheotomy, but he considered it to be preferable, and would always make it in such conditions as in this case presented. With the chloroform administered through the tube the operation is rendered far more easy and cleaner: there is no interruption and the field is always in full view. Many surgeons advocate tying the lingual arteries previous to operating, but this is a tedious though not difficult thing, and would necessarily take up some time. He had had the pleasure of meeting Apostoli, who is certainly an enthusiast in treating fibroma with electricity. Electricity is a powerful agent, and this very fact is also a means of doing harm.

Good surgery does not always consist in cutting: the good surgeon prevents the use of the knife possible as often as he uses it; but when confronted with a condition where there is no alternative, then the knife should be used and used freely. The German surgeons use the knife freely with the object to save life without consideration of cosmetic results. He thought surgeons in this country did not use the knife freely enough in many operations, thereby making the operations more difficult of execution.

DR. H. TALBOTT read a paper by DR. CHARLES O. MOLZ, of Bedford, Ind., (see page 350 of this number) entitled

Abortion; Or Expulsion of the Unviable Fetus.

DISCUSSION.

DR. J. C. FALK said that when abortion was inevitable, the uterus should be emptied as soon as possible. If the os is tightly closed as in the early months of pregnancy, it may be difficult to decide whether or not the contents have been expelled. In such instances he dilates the cervix under complete anesthesia and cleans out the womb with his finger. He does not use the curette, nor does he believe that the same satisfaction can be obtained by the use of the curette as by the use of the finger. After having removed the uterine contents he irrigates the cavity of the uterus with an antiseptic solution, preferably a one per cent carbolic acid solution.

DR. J. G. MOORE thought the percentage of abortions as given by the essayist was too low. During one year he had kept a record of his obstetrical cases and in that time had treated more cases of abortion than of confinement at full term. This might be accounted for by the fact that when abortion is threatened a physician is sent for, while many of the confinements at term are conducted by midwives. He said that bleeding from abortion might come on weeks after the abortion, and mentioned an instance in which the placenta was retained for several months after an abortion; this condition was associated with frequent hemorrhages from the womb, until it was finally removed.

DR. ELLA MARX thought a few days in bed after an abortion were not enough. This widespread idea was the cause of many cases of subinvolution and such troubles. She considered it quite as necessary for a woman to remain in bed in a recumbent position for a week or more after abortion as it was after labor at full term. A great deal of the work of a gynecologist might be saved if the general practitioner when called to attend a case of abortion would insist upon this point.

In regard to emptying the uterus, if it is to be done with the finger, she advocated the use of the rubber glove; this could be rendered perfectly sterile, and when of the thinnest variety the sense of touch is not interfered with.

DR. H. TALBOTT said that it was not always easy to follow a well-marked plan in the conduct of these cases and that it is sometimes

difficult to decide whether or not a woman will inevitably abort After the conduct of the case is the same as that for a case of labor. He thought one should be cautious in exploring the cavity of the uterus with the finger. The nozzle of the ordinary fountain syringe should never be used unless there was an urgent demand for it, and then only when the os uteri is well dilated; a return-flow irrigator should always be used instead.

DR. R. B. H. GRADWOHL thought the use of a sharp preferable to a blunt curette; he did not believe the finger of the obstetrician could not accomplish the work of the curette.

DR. HORACE W. SOPER said it depends upon the condition found to exist; if the uterine contents can be removed *en masse*, perhaps the finger can accomplish it, in which case the curette would be unnecessary. In many cases the contents are septic and then the curette should be used and the patient placed under anesthesia, the contents thoroughly evacuated and then an application of a 95 per cent carbolic acid solution. The use of the douche, however, he would not recommend in any case of abortion. If the contents could be gotten out *en masse* with the finger, he thought it would be wise to let well enough alone and not use the douche. In septic cases a sharp curette would thoroughly evacuate the cavity and then the use of a chemically pure carbolic acid solution would be all that is necessary.

DR. MEISENBACH said he had never been able to do much with the finger except where the abortion took place in the first month or two. His finger was too short, so he usually had to make use of the curette. He did not use the return-current catheter, believing it entirely unnecessary, and thought it was responsible for the harm done in many cases on account of the imperfect dilation of the os; the nozzle of the ordinary douche syringe is too large and the current too strong. He always uses the blunt curette, never the sharp instrument for any condition; he used the Reverdin curette, which in this country is not of the same pattern as the original; with this curette no harm could be done unless very carelessly handled. He never puts strong antiseptics into the uterus, but uses astringents, especially iron—the ferric chloride, and had never seen any bad results follow its use. The placental forceps he condemned as useless.

BOOK REVIEWS.

Hemorrhoids and Other Non-Malignant Rectal Diseases; Diagnosis and Treatment. By W. P. AGNEW, M.D. Fourth Edition. 1899. [Pacific Press Publishing Company, San Francisco, Cal.]

No review of this work can better state its purpose and contents than do the opening words of the author's preface: "In preparing this manual, the object will be to give in plain and comprehensive language as briefly as possible, and with little discussion, a few general rules, which, if even approximately observed, can but lead to success in the treatment, etc."

The book is one of 240 pages, and though in itself short, takes up at greater length than possible in a general surgical work, these troublesome complaints which so frequently come to the physician for treatment.

Cuts to the number of 76 are found here, which naturally aid the reader in his understanding of a subject matter that is almost unstudied though of decided importance.

Among the more valuable features of the book are a large number of prescriptions which the author has found from practice to be especially valuable, these are here presented in full. BARTLETT.

The Modern Treatment of Wounds. By JOHN E. SUMMERS, JR., M.D., Surgeon-in-Chief to the Clarkson Memorial Hospital; Attending Surgeon, Douglas County Hospital; Formerly Professor of the Principles and Practice of Surgery and Clinical Surgery, Omaha Medical College; Ex-President of the Western Surgical and Gynecological Association, the Nebraska State Medical Society, and the Omaha Medical Society. 1899. [Medical Publishing Company, Omaha, Neb.]

This neat little book of 149 pages contains, in condensed form, much that is interesting and at the same time valuable. Nine well-executed cuts serve to make the subject-matter clearer.

The aseptic treatment of surgical as well as of accidental wounds is considered. Everything being taken up in a thoroughly practical manner, not to the neglect, however, of laboratory and scientific teachings.

Of the twenty chapters composing the little work, the last one alone is easily worth the price of them all. Herein is considered the

subject of rubber gloves in surgery, and in a thoroughly sensible manner free from all semblance of unbalanced enthusiasm. The author says that the advantages of a hand-covering that has been boiled far outweigh the possible inconvenience resulting from the presence of the glove. In fact, no one who has worn gloves a few times, ever complains of this inconvenience, all the theoretical disadvantages of this modern form of surgical cleanliness emanate from the active brains of those who have not taken the trouble to use this means of eliminating those occasional suppurations which are seen in the practice of those who are easily satisfied.

BARTLETT.

Treatise on Orthopedic Surgery. By EDWARD H. BRADFORD, M.D., Surgeon to the Children's Hospital and to the Samaritan Hospital; Assistant Professor of Orthopedic Surgery, Harvard Medical School; and ROBERT W. LOVETT, M.D., Assistant Surgeon to the Children's Hospital; Surgeon to the Infant's Hospital. Second revised edition. 1899. [Wm. Wood & Co. Publishers, New York.]

Since the first edition of this work appeared, nine years ago, the progress in orthopedic surgery has been so great that a complete re-writing of the book has been found necessary. It comes to us now in quite a pretentious form, embracing 655 pages neatly bound in cloth.

There are 621 illustrations of the utmost variety. The authors have very nicely depicted radiographs, parts of the bony skeleton, impressions, deformities on the living and the various contrivances for their correction.

While etiology, diagnosis, etc., are fully enough considered, the strongest point in this work lies in its handling of the matter of treatment. This is as fully and clearly dwelt upon as lucid descriptions and good drawings make possible.

The opening chapter is on Potts' disease, no less than 78 pages being devoted to the subject. The authors commend the plaster jacket as a remedial measure, taking the ground, however, that it does good not by holding the segments apart, but by acting simply as a fixation support.

Of the twenty-two chapters none is of more interest to the general profession than that on hip joint disease; from the specimens exhibited in this connection much can be learned of the inroads made by the disease on the surrounding bony parts. Early excision of the hip joint is not recommended where it is possible to carry on a more conservative form of treatment with any show of success.

Taken all in all, the book is conservative, reliable and up to date.

The Practice of Surgery. A Treatise on Surgery for the Use of Practitioners and Students. By HENRY R. WHARTON, M.D., Demonstrator of Surgery in the University of Pennsylvania; Surgeon to the Presbyterian and the Children's Hospitals; Consulting Surgeon to the Bryn Mawr Hospital; Fellow of the American Surgical Association; and B. FARQUHAR CURTIS, M.D., Professor of Clinical Surgery and Adjunct Professor of the Principles of Surgery in the University and Bellevue Medical College of New York; Surgeon to St. Luke's Bellevue Hospital, and the New York Cancer Hospital; Fellow of the American Surgical Association. Profusely illustrated. Revised edition. [J. B. Lippincott Company, Publishers, Philadelphia.]

The second edition of this well and favorably known work seems likely to meet the approval with which the former edition was received. The volume contains 1244 pages and is gotten up in the most approved Lippincott style. Paper, print, etc., are above reproach, while the cuts, of which there are 924, can but please the most exacting reader. What has been said of the cuts holds good both as regards their execution and as regards the interest attaching to the subjects portrayed. This work combines both the considerations of surgical pathology and those of surgical treatment, thus combining for one price a book on general surgery with one on special surgery. It must, then, as a matter of course, appeal to the man of limited means who desires to establish a useful working library on the least outlay of money.

The idea of the work is essentially a practical one. It is necessarily condensed since it is the author's purpose to impart therein to student or practitioner enough to enable him to begin and carry on the practice of surgery. The book contains, it is hoped, all that is required to place the beginner in a position where he can diagnose the ordinary injuries or surgical affections. The essentials of treatment as far as it lies within the province of the general practitioner are also fully considered. On the treatment to be applied by the specialist, only the outline is given which every doctor finds needful, in order that he may, in referring his clients to a specialist, be able to intelligently advise them.

The book is divided into 39 chapters, about one third of them being devoted to general, and the other to special subjects. As an attest of the value of it to the man of few books, it is to be remarked that injuries and diseases of the eye and ear are included, something that is rare in text books on surgery—general or special.

BARTLETT

NOTES AND ITEMS.

Typhoid Fever on the Prison Ships.—A dispatch to the *N. Y. Sun* from Cape Town says that rumors are current there that there are not enough doctors and nurses on the prison transports, upon which an epidemic of typhoid fever is raging. Many civilians have offered their services.

Board of Education Sustained.—The right to exclude from the public schools any pupil who has been ill, until passed upon by the regular medical inspector of the Board of Education, was sustained in a decision handed down by Judge Ball in the Superior Court at Chicago recently. The opinion was given after the hearing of a petition for a writ of mandamus against the School Board to allow a pupil to return to her classes without first having passed a medical examination.

Quarantine Against Bovine Tuberculosis.—The State of Kansas is endeavoring to prevent the spread of tuberculosis among the cattle within its confines by keeping out such as are infected with that disease. Governor Stanley, of Kansas, has issued a proclamation declaring a quarantine which practically prohibits the importation of dairy cattle into that State. The quarantine was established at the request of the Live Stock Sanitary Commission, whose duties are to look after matters of this nature.

Appointment of Drs. Weir and Bull.—Drs. Robert F. Weir and William T. Bull, the professors of surgery in the College of Physicians and Surgeons, New York, have been appointed attending surgeons to Roosevelt Hospital, and will divide between them the service from which Dr. McBurney recently resigned. In the future their clinics, which have heretofore been held at the New York Hospital, which is at a considerable distance from the college, will be at the Roosevelt, directly opposite the college buildings. Dr. Weir has been an attending surgeon at the New York Hospital for nearly thirty years.

The Question of Midwives.—At a hearing on April 13th, before Mayor Van Wyck, of New York, on the Plunkitt Bill, a midwife made the statement that she purchased a diploma for two hundred

dollars, "without ever seeing the body of a woman or child, or even a woman's bone." When she got the diploma she felt so incompetent that she did not dare to practice, and so went to Germany and took a thorough course of study. The bill referred to, which was passed by the Legislature recently, provides that all midwives practicing in New York City must first pass an examination of a commission of five physicians appointed for the purpose by the Board of Health.

Quarantine Against Cuba.—On April 1st the United States Gulf and South Atlantic ports began their quarantine against Havana. The approach of that date warned visitors in Havana and the fear of quarantine started them for home; every stateroom and every available cot on all the steamers leaving Havana March 31st were occupied.

Conference of Sanitaricians Suggested.—On account of the possibility of the plague gaining entrance into the United States, Dr. Reynolds, of Chicago, has suggested to Dr. Geo. M. Sternberg, Surgeon-General of the United States Army, and to Dr. Walter Wyman, Surgeon General of the United States Marine Hospital Service, the advisability of calling a national conference of sanitary officers at an early period to consider the question of its prevention. Such a convention, it is thought, would prove to the nation that the proper authorities were alive to the possible danger of an invasion and would have a tendency to allay fear and create a sense of public security.

Muetter Lectureship of the College of Physicians of Philadelphia.—The next course of ten lectures instituted by the late Professor Thomas Dent Mütter, M.D., LL.D., on some "Point or Points in Surgical Pathology," will be delivered in the winter of 1902-1903 before the College of Physicians of Philadelphia.

The compensation is \$600. The appointment is open to the profession at large. Applications, stating in full subjects of proposed lectures, must be made before October 1, 1900, to the Committee on the Mütter Museum.—JOHN H. BRINTON, M.D., Chairman, Northeast Corner of Thirteenth and Locust Streets, Philadelphia, Pa.

Another Danger From Appendicitis.—It is evident that the appendix is not "born to blush unseen," and like the luckless ovary of a few years ago, is ever in danger of being suddenly brought from its situation of fancied security to the light of day and of being made the subject for innumerable discussions in medical meetings. The *Philadelphia Medical Journal*, in a recent issue under the head-

ing, "A Blessing in Disguise," contains the following remarkable item:

"Two men in Brooklyn, N. Y., had a personal encounter. One of the parties to this row, and the one who received the roughest treatment, happened to have appendicitis. He had dreaded an operation, but his opponent having very thoughtfully stabbed him in the southwest region of the abdomen, the surgeon at the Eastern District Hospital found it a comparatively simple matter to finish up the work of the assailant by removing the offending appendix. It is reported that the man was sadly in need of an operation, and that he is doing well in spite of the peculiar circumstances attending its performance. Another indirect advantage is that the patient is beginning to feel somewhat pleasantly disposed toward his opponent and bitter enemy of only a few nights ago."

Oh! appendicitis, what tales are told in thy name!

Hospital for Tuberculosis.—The Legislature of the State of New York is taking steps to provide for the care of tuberculous patients in specially equipped State hospitals. On March 14th Dr. Henry, of New York, introduced in the Legislature a bill for the establishment of a tuberculosis hospital in or near New York City. The bill provides that the hospital shall be in charge of the Department of Health and that the corporation counsel, upon a written request from the Department, shall take the necessary steps to secure a site; while the controller is directed to issue corporate stock to the amount of \$100,000 to pay for a site and \$250,000 for construction. The Senate Finance Committee has recommended the appropriation of \$150,000 for the establishment of a State Hospital in the Adirondacks for the treatment of incipient pulmonary tuberculosis. At a meeting of physicians and officers representing the hospitals in the Boroughs of Manhattan and the Bronx, and also some of the suburban hospitals, which was held recently in the library of the Charity Organization Society, a resolution was unanimously adopted urging the passage of the bill which provides for such an institution. In the discussion on the resolution, it was pointed out that it is becoming increasingly difficult for tuberculosis patients to secure admission into the existing hospitals, and the State is confronted with the fact that there are 14,000 new cases of the disease each year, with practically no hospital accommodations for them. The percentage of those who are cured, even under the present unfavorable conditions of treatment, is most encouraging, and indicates what might be done by hospitals in which tuberculosis patients could be adequately treated.

ST. LOUIS
COURIER OF MEDICINE.

VOL. XXII.

JUNE, 1900.

No. 6.

ORIGINAL CONTRIBUTIONS.

Cold as an Etiological Factor in Diseases of
the Air Passages.

By JOHN ZAHORSKY, A.B., M.D.,

ST. LOUIS, MO.,

CHIEF OF THE CHILDRENS' CLINIC ST. JOHN'S HOSPITAL DISPENSARY, MEDICAL
DEPARTMENT OF WASHINGTON UNIVERSITY; ATTENDING PHYSICIAN
AT THE BETHESDA FOUNDLING'S HOME, ETC.

Read before the St. Louis Medical Science Club, April, 1900.

THE idea of cold as an etiological factor in disease is so deeply rooted in the minds of men, that evidence which detracts from its potency must be overwhelming to produce any impression. Albeit, this factor from a scientific standpoint has been an enigma. Theory after theory is offered to explain its action, and each one upset by some other investigator. Contradictions and absurdities are mingled in many of the attempts to place the fact of taking cold on a physiological basis; and to-day, with all our vaunted advance in experimental pathology, this vulgar affection is beyond our grasp.

Hippocrates laid down some aphorisms in regard to cold which ruled undismayed until the latter part of the nineteenth century.

"Cold induces convulsions, tetanus, mortification, and febrile rigors."

"Cold is inimical to the bones and teeth, the nerves, the brain, and the spinal marrow."

"Cold pinches ulcers, hardens the skin, occasions pain which does not end in suppuration, blackens, produces febrile rigors, convulsions, and tetanus."

"Cold things, such as snow and ice, are inimical to the chest, being provocative of coughs, of discharges of blood, and of catarrhs."

As mentioned, these aphorisms remained immovably entwined with all etiological conceptions of disease. Almost all the infectious diseases were supposed to be excited by cold. In this list, beside those of the respiratory tract, were those of the digestive, the cerebro-spinal, and genito-urinary tracts. Typhoid fever, malaria, and septicemia were also believed to be more or less connected by exposure to an outbreak in the individual.

Thus, Churchill's "System of Midwifery," 1853, states that cold wet weather is a potent factor in the causation of puerperal fever.

Malarial fever has been ascribed to changes in the atmosphere. Folchi, in 1843, made this statement: "To my mind the watery vapor which is constantly given out by a moist soil during the heat of the day, and which, becoming denser at night, descends toward the lower strata of the atmosphere, accompanied with a notable diminution of temperature is the agent, which, in a body predisposed to it, occasions the [periodical] fever in question."

In the medical literature of the last of the eighteenth and the beginning of the nineteenth century, cold as a causative agent in all diseases is given a high prominence. "When we reflect," said Dr. Bell, "on the great number and variety of diseases which directly originate in suppressed perspiration and atony of the skin, we feel naturally alive to the best means of preventing this state of the system."

"Next to war and pestilence on the one hand," remarked the editor of the *Journal of Health*, in 1829, "and sloth and intemperance on the other, cold is perhaps the cause from which

the most serious diseases and the greatest destruction of life results."

Hayward even, in 1866, in a large monograph on the subject, makes cold the exciting cause of one-half of our diseases.

But the pre-eminence of cold as a disease-producing agent began to wane with the advent of microbiology. In malaria, puerperal fever, suppuration, septicemia, and diphtheria, it is now universally admitted, cold has only a minor influence. In the same category has fallen pneumonia, phthisis, and pleurisy, which for centuries were supposed to depend on cold as the exciting agent.

Very interesting is the evolution of our thought on this subject in pediatrics. One hundred years ago, almost all the diseases of infancy, from tetanus to dysentery, were connected with exposure, drafts, and damp clothing. "Nothing, perhaps," said Dewees, "can be more satisfactorily proved than the agency of cold moist air in the production of croup." In another place, "chilling or the sudden stoppage of perspiration may cause diarrhea. * * * Mucous diarrhea is almost invariably produced by the sudden checking of perspiration or a cold bath." At present cold in these diseases is given a very subordinate power.

Modern authorities have discarded cold, unless as an incidental or mild predisposing factor, except in two classes of diseases: First, those of the respiratory tract; and second, those of the nervous system. The facts which are usually given to sustain the theory that cold is an exciting cause in diseases of the air passages are as follows:

1. These diseases occur mostly during the winter seasons.
2. In a great number of the cases the patient gives a history of exposure.
3. Individual experience in regard to chilliness from wet feet, drafts, and exposure is almost universal.

Let us examine this evidence more in detail.

The occurrence of diseases of the respiratory tract during the winter months is undoubted. The following are the statistics from the Edinburgh Royal Infirmary of the number of cases of bronchitis admitted during 1890-94:

WINTER MONTHS.		SUMMER MONTHS.	
January	141.	April.....	107.
February.....	102.	May.....	83.
March.....	128.	June.....	105.
October.....	102.	July.....	78.
November.....	129.	August.....	71.
December	129.	September.....	77.
<hr/>		<hr/>	
Total.....	731.	Total.....	511.

It is obvious that the ratio of its occurrence in winter and summer is about one and one-half to one.

The following are the number of diseases of the upper respiratory tract (diphtheria and pertussis excluded) treated at the Childrens' Clinic, St. John's Hospital Dispensary, during the last three years (1897-99 inclusive):

WINTER MONTHS.		SUMMER MONTHS.	
January.....	41.	April.....	45.
February	45.	May.....	29.
March.....	46.	June.....	27.
October.....	31.	July.....	16.
November.....	48.	August	16.
December.....	47.	September.....	13.
<hr/>		<hr/>	
Total.....	250.	Total.....	146.

It will be seen that the ratio is similar, that is, less than two to one.

While these figures definitely show that these diseases are more prevalent in the winter months, yet the ratio is about the same as in other acute infectious diseases in which the respiratory organs are the site of infection.

Bosworth, during thirteen years, found the deaths from diphtheria in New York City to be 18,688 in the winter months (October to March), and 7,919 during the summer months (April to September), or a ratio of two and a half to one.

From statistics of pneumonia treated at the Boston City Hospital I find the ratio about two to one.

A similar ratio is found with the occurrence of scarlet fever.

Measles, rotheln, and chicken-pox occur mostly during the latter winter months. The same is true of cerebro-spinal fever. Rheumatism—recent investigation suggests that an infection through the upper air passages is the cause—is occasioned most frequently in the same months. In short, all diseases which the infection enters the organism through the respiratory tract, are much more prevalent in the winter than in the summer months. This has been attributed to the greater vulnerability of the mucous membranes during this cold season, but must, as we shall see, be due to the congregation of individuals and the non-ventilation of rooms.

The second fact mentioned, that patients frequently give a history of exposure, has a great many weak points. In the first place, this history is found in a much smaller percentage of cases than is usually supposed. Thus, in pneumonia a history of exposure can be obtained in only about 10 per cent. of cases. In bronchitis and coryza a history of exposure is found in a greater percentage, but great pains are usually taken by individuals to recall some careless act on their part. It is easy to find in our daily occupation and habits some exposure. For example, washing the hair, bathing, change of underclothing, neglecting to wear an overcoat, washing the feet, sitting in a draft, etc.; such are commonly stated as the cause of an angina or bronchitis. But these "errors" are so exceedingly common in the daily habits of the individual that it is impossible to arrive at an approximate valuation of their influence. But one thing is certain, that in only a small proportion of cases of the common diseases of the upper air passages can a distinct history of a *severe* exposure be discovered.

Individual impressions, as regards the morbid influence of cold, are almost universal. Few persons are found who can not cite many instances in their experience when cold caused disease. But this universal belief must not be taken too seriously. We all know the common belief that the parturient woman must be protected from cold to guard against fever. How many sins of the profession have been caused by this convenient and ever-satisfying cause? So, also, the injured hand must be covered that he may not catch "cold" in it. Such is the common idea and it is so deeply rooted in the minds of the laity,

that it can be overcome only with the greatest difficulty.

Examination of the basis for the common impression that disease of the upper air passage is due to cold reveals a very unstable structure. The error of belief arises in many ways, but behind it all is the prejudice of the personal opinion that such a disease is necessarily due to cold. The error is fostered in the greatest measure by the prodromal symptoms of the acute infectious diseases. Thus, in tonsillitis, influenza, and other acute anginas, chilliness is a common symptom; and this prodromal chilliness is made the exciting cause of the symptoms ensuing. This is similar to the thought that was formerly entertained, very seriously, that the initial chill of pneumonia is the cause of the consolidation in the lungs. It is common in our inquiry as to the previous condition to learn that the patient was out and got so cold and chilly. But the interval between the chilliness and the advent of other symptoms is too short to allow the supposition that this chilliness was the predisposing factor in the infection.

The impression is sustained also by the inaccurate observation to individuals. The "cold" in the head induces us to search for an exposure, but an exposure without symptoms following is quickly forgotten. Common popular incidents reveal so many inconsistencies and mysticisms, that while we can not deny a grain of truth underlying all, we must discard most of the facts as unworthy to be posited for scientific deductions. Thus, wetting of the feet is supposed to be a common cause of "colds." Pathologists have spent hours in racking their ingenuity to explain its action, but few have dared question its force. Yet, I am unable to find any exact observations recorded, and when we examine the facts more closely the preponderance of its value seems almost lost. The inconsistency lies in the fact that persons almost daily during the winter get very cold feet, and no harm follows. Perhaps no one fails at various times to have his feet so cold that the toes ache, and yet no harm follows; and he may have these cold feet all day and yet nothing serious results. In other words, a distinction is commonly made between dry and wet cold feet.

But we have no experiments, no accurate observations, to prove that any such distinction is permissible. They must be

placed in the same category. People have a great dread of cold wet feet, but few have had wet feet sufficiently often to be able to speak authoritatively on it.

The question of drafts has also its contradictory phases. On any windy day in winter any individual will find that drafts of all severity strike his body in spite of his clothes. But the popular idea has it that drafts in a room are very pernicious; why this is so is unknown. It is certainly not because they are severer. The person, it is true, is not exercising; but every time a person rides in an open vehicle, drafts also strike his back and chest with all varieties of velocities, and still it is considered harmless.

On the other hand, many kinds of exposures can be pointed out, which, all must admit, are harmless. Thus so many persons take cold baths in the morning with benefit. Then many persons sleep in cold apartments, where the individual undresses and lies in a cold bed and may shiver for many minutes. The sitting in open street-cars and vehicles is supposed to be harmless.

Lately, the almost universal employment of cold baths in fevers, particularly in infancy and childhood, stands as a mocking figure against the theory that cold by inducing congestion of the internal organs is the exciting cause of bronchitis. Thousands of clinical cases attest the fact that contraction of the peripheral blood-vessels does not predispose to bronchitis.

So, with our prejudices, with the wrong interpretation of the phenomenon the cold remains powerful. The baby kicks off its covering in the night, and the next morning it has a "cold." The mother attributes the cold to the kicking off its cover, while the truth of the matter is, the baby felt feverish—a symptom of the disease, and this induced it to kick off its cover. The baby does not kick off its cover when it is more comfortable under it. Rickety babies are prone to kick off their cover, but we also know they are extremely susceptible to infection.

Chelmonski (*Deut. Arch. f. klin. Med.*, 1897), after a study of this subject, concludes with the astonishing remark that mild exposure is more dangerous than severe exposure, since the reaction is less. This is another statement to add to the con-

fusion. It is preposterous to think that mild variations in temperature and moisture should be inimical to human welfare. It is absurd on its face. It only convinces me, that in trying to establish cold as a disease-producing agent, we are after a "will of the wisp" that continually changes its place.

This reaction that we hear so much about does not seem to lie very softly with science. What is the reaction but a dilatation of peripheral vessels after their contraction? It can mean nothing else. If the individual is out in the cold we certainly do not want any reaction. It is healthy to have the blood-vessels well contracted until you are in a warm place. Then we can have a relaxation. But there does not seem to be any reason why this should be excessive, or why a very strong reaction is better than a milder one.

Chelmonski, however, concludes that cold, in the ordinary sense, does not produce disease. Gardner (*Birmingham Medical Review*, 1898) arrives at a similar conclusion, and asserts that "colds" are infectious. As further proof of this, he cites Nansen's experience in the Arctic regions, at which place he and his companions were free from "colds," but contracted it on their return to Norway.

The real effect of cold is to induce a feeling of lassitude and fatigue. The vasomotor system of the skin is put on a special strain, and the thermogenic power is taxed. In an ordinary exposure this is sufficient to prevent any reduction in temperature. But if the cold is continued and there is as yet insufficient adaptation in the heat-regulating apparatus, a reduction in temperature may take place, and, according to the experiments of Fischl and others, the body is more susceptible to infection. It is the common experience after a cold day, particularly in autumn, to feel very tired and drowsy. I, myself, am extremely susceptible to so-called "colds." Yet, this did not deter me from making an experiment. While I frequently take a cold bath, last November I took a very cold bath for fifteen minutes. The temperature of the water was about 50° F. The effect of this was that I felt extremely tired. My limbs felt very heavy and I was drowsy throughout the whole day. The fatigue is in a great measure due to the contraction of the muscles of the skin, but mostly to the violent

contraction of all the muscles in shivering. This shivering is the body's endeavor to raise the temperature. About two months ago, I attended to my professional duties all day with wet feet. The day was rainy, the streets wet, and the soles of my shoes had holes. In the evening I had a similar sense of fatigue; four weeks later I was attacked with a severe angina, without any exposure.

At present "colds" must be regarded as acute infectious diseases. The exceptions to this possibly are certain fleeting forms of coryza depending on similar constitutional states, as asthma and hay fever. But the vast majority of "colds" depend on pathogenic micro-organisms, the most common of which are the bacillus influenza, the micrococcus lanceolatus, and the streptococcus pyogenes. The evidence that "colds" are infectious diseases is progressively becoming more convincing. The facts that speak for this are as follows:

1. *Colds run a more or less definite course.*

In spite of all our therapy, it is only the exception that that we can succeed in aborting a "cold." The symptoms may be mitigated, but as a rule a decided cold has a course of from three to seven days, in spite of all remedial measures.

2. *The inflammation begins at one point and spreads up and down the respiratory tract.*

This fact I observe several times annually on myself. Clinically, too, it is the common observation. The patient at first has an angina, then follows a coryza and bronchitis. Or, the laryngitis may precede the bronchitis. The rhinitis is frequently the first symptom. First one side of the nose is involved, then the other; subsequently, bronchitis may occur. Of course, the limitations of its spread varies in different individuals and at different times. In this respect it is very similar to erysipelas.

3. *Colds are accompanied by fever and general symptoms.*

This fever is best shown during infancy and childhood. During infancy the mildest angina or coryza or laryngitis has its onset in more or less elevation of temperature. In adults, too, while not so pronounced, a slight elevation of temperature is very common. The fever runs a more or less definite course, it has its remissions and recrudescences, and is analogous to

that in other infections, only varying in degree. The general symptoms of aching in the limbs, lassitude, weakness, and headache are similar to those in other infectious diseases, and suggest a toxin circulating in the blood.

4. *Microscopically, inflammatory changes are found in the mucous membrane.*

The congestion and swelling is visible to the naked eye. Cases coming to the autopsy show an infiltration by leucocytes of the mucosa and submucosa.

5. *The ordinary secretion of the mucous membrane is soon replaced by a discharge more or less purulent.*

This suggests a chematoxic poison.

6. *A great increase in the number and variety of bacteria are found in the secretions.*

Work has been done particularly in the many forms of angina formerly believed to be due to cold.

Barthels found micrococci in common colds. Stoas found only the ordinary bacteria of the mouth, but these were very much increased in number.

Lemoine asserts that the streptococcus is the most frequent cause, particularly in follicular tonsillitis.

Veillon found also the pneumococcus and staphylococcus.

The pneumo-bacillus of Friedlander has been found in bronchitis by Sylvestrini and others. Fraenkel's diplococcus is frequent in the bronchitis of children.

In a limited number of cases I have studied the bacteria in bronchitis and angina. In one epidemic of angina among our nurses, I found the staphylococcus aureus in almost pure culture. At another time a diplococcus resembling Fraenkel's micrococcus lanceolatus was the principal organism present. The streptococci are also very frequently found.

But the most common exciting cause of bronchitis is certainly the influenza bacillus. According to recent investigations of Brieger and Neufeld, this micro-organism is common in the cavities of tuberculous lungs. No doubt it is also found in many chronic pneumonias, and possibly in chronic bronchitis. These serve as culture grounds and store-houses for this microbe. Dr. Fisch has found it in a case of pneumonia when no epidemic was present.

Lindenthal reported eight cases of sporadic influenza with autopsies. Clinically, too, sporadic cases of undoubted influenza are far from uncommon. If, then, this bacillus is always with us, many mild "colds" may be referred to its activity.

7. *The varying clinical picture in the nose and fauces speaks for a variety in the virulence and character of the micro-organisms.*

8. *Colds are contagious.*

This is well known in influenza, but its application to other diseases of the upper air passages is usually overlooked. Its greatest significance is found in pediatric practice. Whenever one child in a family has a bronchitis, very soon the other children also cough, or have a coryza. This is so manifestly obvious to anyone having extensive practice that it is difficult to understand why it has not impressed practitioners long ago.

I have for the last few years at my childrens' clinic kept this fact in mind and its verification is almost the invariable rule. Mothers will bring their infants with a coryza, with croup, or bronchitis, and almost without exception, one or more individuals of the family have a "cold."

In private practice, the mother usually positively affirms that she has not had the baby out, that she takes great care that the baby does not take cold, and she is greatly puzzled why the baby should have a cough. But inquiry as to the condition of the other children will almost invariably elicit the statement that one or more have colds.

Now, I am not confusing epidemics of influenza with ordinary bronchitis, for I find this when no influenza epidemic is present. For example, during the winter of 1898-99, the influenza epidemic was widespread in St. Louis during January and February. Yet, in October, 1898, I made this note in my recording book at the clinic: There is a widespread epidemic of bronchitis at present, I had the disease myself. Altogether, more than fifty cases have come under my observation in the last two weeks. There is very little fever at the onset. It starts as a coryza or laryngitis followed by a cough. It gets well in about a week.

The communicability of diseases of the upper air passages is furthermore proven by experience in hospitals and asylums.

In the Bethesda Foundling Home an acute coryza or bronchitis occurring in one patient is sure to be followed by other cases. Of course, this is particularly striking during the influenza epidemic. The disease then spreads from one nursery to the other and none escape. But at other seasons various outbreaks of coryza, pharyngitis or bronchitis occur and these gradually spread. Sometimes the outbreak is limited to one nursery or one floor. One case of pneumonia occurring is always sure, in winter, to be followed by others. In January, 1899, ten cases occurred in quick succession. Only recently five cases occurred in about three weeks' time.

Tonsillitis is similarly contagious. If one nurse is attacked by a severe angina, her room-mate is almost sure to get it. In the spring of 1899, these nurses, who successively nursed one another, had tonsillitis follicularis.

A striking fact is that anginas of all kinds are exceedingly common among the infants and nurses at the Foundling Home. This is especially true during the winter months. New nurses, particularly those who come from the country, are especially liable to infection of the upper air passages. Here are nurses and babies who are not exposed to any cold, and yet particularly liable to all kinds of so-called "colds."

Another well-known fact is that colds are much more prevalent in the city than in the country. In this respect the analogy to other infectious diseases is also perfect.

9. *A relative immunity follows each attack.*

This has been noted by many observers. Were colds merely reflex congestions, repeated attacks would follow each other in quick succession. But after one attack an individual is usually free from attacks for a short time. Unfortunately, this immunity is not lasting, and the individual becomes more susceptible after a certain interval.

On this evidence there can be no doubt that at least the vast majority of "colds" are acute infections, and a great susceptibility to "colds" really means a great predisposition to infection of the upper air passages by certain bacteria. As in all infectious diseases, this depends on a great complexity of cellular activities, and cold is only one of the incidental factors which may modify it.

At present many authorities are viewing the theory of infection with favor, but to cold is still assigned the principal part in exciting an attack. The cold, it is believed, makes the air passages vulnerable to bacterial penetration.

Fischel and others have exposed animals to severe cold and after inoculation with the pneumococcus found their resistance to this infection was very much lessened. In these experiments, however, the temperature of the animal was very much reduced, and the whole metabolic activity must have been modified. Such severe exposures are very rare in man and can hardly enter into the discussion of "colds." Formerly a favorite theory was the suppression of perspiration, but no one defends this now. This was the explanation in the overheating and cooling. But overheating and cooling is a constant phenomena of fevers, where hydrotherapy does only good.

Seitz ("Ziensen's Cyclopedia") discusses in a very interesting manner the diseases that follow cold. His theory of the pathology of "colds" is the one most commonly held now, namely, that the irritation of the external sensory nerve endings by reflex action excites areas of vascular dilatation on the mucous membrane. At present this theory is made to apply to the predisposition to infection. Rossbach has apparently confirmed this by demonstrating that the blood-vessels of the trachea dilate when the body of a rabbit has been cooled. To this has been attached great importance and has been connected with the discovery of Bier, that passive hyperemia is inimical to infection, and Hamburger's assertion that this is due to the increased alkalinity. Then the deduction has been drawn that this congestion of the trachea is active hyperemia, and, consequently, the blood there is reduced in alkalinity, and of course contrary to passive congestion, favors infection. But these are unwarranted deductions. It may be similarly deduced that since acute anemia favors infection (Dorno, *Vratch*, March 4, 1900), and the violent reaction in certain individuals causes an anemia of the mucous membrane; therefore, a good reaction after a cold is injurious.

As external cold produces a congestion of all the internal organs, we should expect likewise a great increase of gastro-enteric and hepatic diseases in winter; but such is not the case.

It has, furthermore, been asserted that the hardening against cold has the effect that the blood-vessels of skin do not contract so promptly on the application of cold. But this is contrary to the experiments of Lode, who has shown that in dogs placed icewater, the blood-vessels contract more powerfully and less heat is given off after repeated immersions. This is also the clinical experience in hydrotherapy.

In view of this great difficulty in assigning to cold a definite value, we must learn to discard it, except as an incidental or secondary cause, and seek other factors which may more rationally be etiologically related to disease of the upper air passages. But how do we account for the greater number of such diseases in the cooler months? The explanation is analogous to that given for the great preponderance of gastro-enteric diseases in summer, namely, the conditions are favorable for the growth and dissemination of bacteria that attack the respiratory tract.

The work of Flügge and his pupils in the last few years have definitely demonstrated the mechanism of air infection. He has shown that small particles are ejected from the nose and mouth during sneezing and coughing; these particles carry micro-organisms. He has shown the possibility of contagium being carried from one to another in this way. He has, furthermore, demonstrated that a light draft can carry small particles of dust. This dust may carry infection. It will be readily seen how one person with a cough in a closed room may infect others. Germano has proved that most all micro-organisms, such as the *diplococcus lanceolatus*, the *diplococcus intracellularis*, the *streptococcus pyogenes*, etc., when slowly dried, retain their virulence in dust for many hours and even days. DeOrlando claims that the *pneumococcus*, when dried with sputum, retains its virulence for several weeks.

The conditions most favorable for individual infection are found during cold weather. This is easily referable to the congregation of people and the non-ventilation of rooms. In summer we practically live outdoors, and, as Flügge has said, air-infection in the open air would be one of the curiosities of hygiene; for the particles ejected from the air passages during coughing and sneezing are quickly dispersed. But in winter

the stagnant air of our dwellings retains them, or they fall to the floor and are found in the dust; they accumulate and from the enormity of their number results the multitude of infections. It is possible, too, that an increase of carbon dioxid in the air paralyzes the lining epithelium and thus favors infection. The congregation of the people in schools, churches, theaters, and other places, breathing vitiated air filled with bacteria, is a potent cause of our respiratory diseases.

In order to ascertain the number of bacteria in a room which has been occupied with a great number of human beings, the following tests were made at the Bethesda Foundling Home:

Experiment 1. A large petri dish was exposed for one-half hour in a nursery in which fifty infants had been sleeping all night. The weather was cold and ventilation was rather deficient. During the exposure of this plate the nurses were coming in and out, taking up the babies.

Twenty-four hours' growth in the incubator revealed seventy-two colonies. No effort was made to determine the kind of bacteria present.

The nutrient medium used in all these tests was glycerin agar-agar.

Experiment 2. Another petri dish the same size as the preceding one was exposed for one-half hour in the same nursery. But all the infants had just been removed, and for one-half hour free ventilation, produced by opening all the windows, was permitted. Practically, all the air in the room was thus renewed from the outside.

After twenty-four hours' growth in the incubator, not a single colony was found on this plate.

Experiment 3. A third petri dish was exposed for one-half hour in a nursery from which nearly all infants had been removed but which had not yet received a thorough airing. This plate showed sixty colonies.

Experiment 4. Another petri dish put into the same nursery after an hour's airing did not show a single colony.

Experiment 5. A smaller petri dish under same conditions as in Experiment 3, but ventilation being more perfect, showed only twenty-five colonies.

Experiment 6. A similar dish was placed on the bed of a nursery which had been aired all night, but to which about fifty infants had been moved during three hours' time. The exposure was one-half hour. This plate showed only three colonies.

While these experiments are few in number, they definitely show that air polluted during the whole night by many persons contains an enormous number of bacteria. No doubt the vast majority of these are molds and fungi, but the bacteria were also present. During this time a great many infants were sick with diseases of the respiratory tract, and coughing and sneezing were common.

An air that contains so many micro-organisms, like milk containing many bacteria, must be considered dangerous.

Since making the above experiments my attention has been called to the work of Concornutti. He made similar experiments, but in addition tested the virulence of the germs present by injecting an emulsion of the colonies into rabbits. The plates were exposed for a varying period of time in buildings, churches, hallways, etc., and the number and virulence of the organisms present were in direct proportion to the completeness of ventilation and excellency of hygienic surroundings.

There can be no doubt, then, that air in non-ventilated occupied rooms is more liable to be contaminated and more liable to infection.

Nevertheless, from observation in hospital and private practice, I am rather skeptical concerning the pathogenic properties of ordinary bacteria of the mouth, nose, and throat. Possibly, with the exception of the micrococcus lanceolatus, none are virulent, and their virulence can not be quickly enhanced by exposure. I am inclined to regard these diseases in the vast majority of cases as directly contagious; that is, a cold comes from another cold. "Colds" as we have seen are always with us, and thus dissemination like measles and diphtheria varies with the congregation of individuals and the ventilation of rooms.

By adapting this theory many inexplicable facts become very clear. It is seen why cold so frequently follows a night

in the ball-room, where the air is overheated, stagnant, and filled with particles. A few hours spent in a crowded theater gives a good opportunity for both infection and incubation in the throat and tubes. The coughing child in the non-ventilated school-room may infect dozens. Is it astonishing how the children at school so frequently have "colds?"

This explains the gradual increase of air infection during the winter, and its persistence in the spring, until free ventilation and sunlight destroy and disperse air bacteria. By the great increase of pneumococci the occurrence of pneumonia towards spring increases. Measles, chicken-pox, and other air infections are most common then.

With the advent of open-door life the diseases abate, but never entirely die out.

CONCLUSIONS.

1. Common "colds" are acute infectious diseases.
2. *Severe* exposure acts as a general predisposing cause to infection. The detrimental effect of the manifold mild exposures is very doubtful.
3. Rarely the normal or accidental bacteria in the upper air passages may excite disease.
4. Most commonly a micro-organism from some one else having a "cold" is the exciting cause.
5. Any lesion of the mucous membrane, such as chronic ulceration in the nose; or recent lesions produced by the inhalation of dust, impure air, noxious or irritating vapors, and possibly very cold air predispose to infections of the upper air passage.
6. Congregation of persons and the non-ventilation of rooms are the principle factors which produce the increased prevalence of colds during the winter seasons.

[1635 South Grand Avenue]

The New York City Hospital for Consumptives.—Dr. Henry's bill to provide for the establishment by the city of New York of a hospital for the regular treatment of pulmonary tuberculosis, and appropriating \$350,000 therefor, passed the Assembly. The local board of health is to have jurisdiction over the new hospital.

Treatment of the "Clinical Types" of the Uric Acid Diathesis.

BY I. N. DANFORTH, A.M., M.D.,

CHICAGO, ILL.

Read before the Association of American Physicians at the meeting held in Washington, D. C., May, 1900.

AT a meeting of this Association in May, 1899, I had the honor to present a paper on "The Clinical Types of the Uric Acid Diathesis," in which I described three different types of that diathesis as follows: (1) The Plethoric Type; (2) The Neurotic Type; (3) The Anemic Type; illustrating each type by typical cases.

Toward the end of my paper I said: "It is not the purpose of this paper to treat at length or in detail of the therapeutics and dietetics of lithemia, as I propose relating the result of my experience on a future occasion." It is the object of the present paper to carry out the purpose then announced, and ask attention, in considerable detail to the treatment, dietary and general management of the several types of lithemia.

1. *The Plethoric Type.*—The patients are mostly middle-aged well-to-do men, in active business pursuits, frequently over-worked and over-burdened with financial cares; the healthy, vigorous men who do most of the business in our larger cities and towns. These patients have scanty, high-colored urine, of intensely acid reaction and high specific gravity. On standing, a copious deposit of uric acid falls, and there may be slight albuminuria with small hyaline or "cylindroid" casts. They have coated tongues, constipated bowels, congested livers, pounding hearts, tense arteries, aching heads, and frequent attacks of giddiness, with floating objects or momentary cloudiness before the eyes. They are frequently subjects of apoplexy, which they may survive many years, as hemiplegics, with or without grave cerebral failure.

The principle which should guide us in the treatment of this class of lithemics is very clear, namely, first, to reduce the

ingestion of nitrogenous food to the minimum, and secondly, to increase the output of nitrogenous end-products to the maximum. But if the *principles* are clear, the reduction of these principles to *practice* is not always easy. For the plethoric lithemic is generally "a good liver" and he does not take kindly to any material restriction of his diet or drink. Yet, this is rather more essential than the administration of drugs, and it is certain that the drugs do little or no good unless the ingesta are properly regulated. But even if the patient is ideally docile, or positively anxious to co-operate with the physician, it is sometimes very difficult to adapt a proper diet to the indulged and pampered palates of the patients under discussion. But my experience has taught me one thing, namely, that an initiatory period of starvation has an excellent effect, both physically and morally. I have many times heard patients express gratification and satisfaction over the departure of their miserable feelings while they were upon an abstemious diet, and they were consequently all the more willing to continue the exercise of a little common sense in regard to their food.

By "starvation" I mean the absolute abandonment of meats of all kinds, of pastries and sweet-meats, of tea and coffee, and of tobacco in all forms, and alcoholic stimulants of every variety, for a period of from two to four weeks or during the initiatory period of medical treatment, to be indicated presently. In lieu of all these, the patient may take milk and cereals with fruit and apollinaris or vichy, or a cup of "postum cereal" in the morning; thin soup with dry toast or soda wafers and a glass of hot milk at noon, and a small allowance of broiled fish or fowl with bread and fruit at night—or such equivalents of these as the physician may select. But the quantity or "ration" must be limited, so that the digestive tract may have a rest and the scavenger organs allow themselves a little respite from their habitual overstrain, and at the same time be able to give a little attention to the remedial eliminants which will be administered during this period.

As regards the permanent diet of the plethoric lithemic, it may be laid down as an axiom that flesh diet must be used sparingly, and that the stronger meats, like steaks, chops, and

roasts, must be practically abandoned. But something must be substituted in their stead, and two objects must be kept in mind, namely, to furnish a nutritious and easily digested diet, which shall contain the least amount of nitrogen. In daily practice I have found the following diet scheme answer a good purpose. Breakfast: fruit, consisting of oranges, grape fruit, apples (raw or baked), berries in season, melons, plums or cherries—the preference being given to oranges, apples, or grape fruit. The fruit acids certainly promote gastric digestion, and I have long been satisfied that they are decidedly cholagogue, and are therefore eliminants. Following the fruit, cereals of any kind, *ad libitum*. We have now a great variety of nutritious and palatable breakfast foods, from which the patient may choose, and he can vary these so as to avoid a wearisome monotony. They should be eaten with a mixture of milk, two parts, and cream, one part, rather than either milk or cream alone. The morning meal may be concluded with an egg on toast, some corn-bread, or graham muffins, or any other equivalent, and a cup of weak coffee, or chocolate, or better yet, a cup of “postum cereal.” The mid-day meal is generally the curse of this class of patients. It is usually “taken on the fly” in five or ten minutes, and frequently consists of hearty, solid food, half masticated, and “bolted” in masses. I have many times watched, with disgusting interest, the “business man’s lunches” as they are served and eaten here in Chicago and other large cities. It seems incredible that intelligent, educated men—and among them physicians, dentists, and other scientific men—should so far forget the usages of decency, as to devour their food after the manner of their canine and porcine ancestors. I am well satisfied that many of my cases of plethoric lithemia may be traced primarily to the mid-day gorging at the “business lunches,” and the subsequent gastro-intestinal turmoil. The medical advisor of such patients should change all this; the mid-day lunch should be a “luncheon,” light in quality, moderate in quantity, and nothing more. Milk with bread or rice, or something similar; soup, an oyster stew in its season, or any other light and easily digested food, in moderate quantity, and taken in a decent and proper manner, so that it shall not be necessary for the stomach to undertake the added

duties of a gizzard. It is especially necessary for the busy, driving men of affairs—those who do the business of the great cities—to persistently and faithfully observe these precepts, if they expect to escape the torture of uric acid dyspepsia. The evening meal should be “dinner in theory and fact”; to be partaken after the hurry and flurry of the day's work, with plenty of time and the cheerful company of his family. Soups, vegetables, meats, or fowl or fish in moderation—with special regard for moderation as to roasts and grilles; salads, fruits, and tea or coffee—in fact, a “course” dinner, with due regard to moderation as to number and quality of courses and quantity of food comprising each course. And let this busy, tired, gouty patient be instructed by his physician to leave his business cares and worries down town, so that he can go home to a quiet, restful, cheerful dinner, followed by an evening of relaxation and rest or recreation. Let him be instructed in the lost art of mastication; let him be warned of the danger of rapid eating, and of the importance of good serviceable teeth, free from foul and septic cavities. I have had more than one “gentleman” in my clientele, who needed jogging on the use of his tooth brush and a cleansing mouth wash. If the patient takes stimulants at all, he should be cautious and abstemious; a glass or two of light wine in the evening. If he smokes, let this indulgence be limited to not more than two mild cigars a day, and let the abominable habit of “dry smoking,” *i. e.*, carrying an unlighted cigar in the mouth hour after hour, be forbidden *in toto*.

The medical treatment of plethoric lithemia is less important than the dietetic, yet it must not be neglected. Cholagogues are indicated in small frequent doses, and I have been particularly pleased with the mercuric iodides, such as a quarter of a grain of the prot iodide, or a thirtieth of a grain of the bin-iodide three times a day, with a cathartic dose of hunyadi on rising. This particular class of cases is especially benefited by the rather free use of saline cathartics containing soda sulphate or magnesium sulphate, with now and then a small dose of mercury, as above indicated.

Among cholagogues, the nitrohydrochloric acid most always take a high rank, and its efficiency is notably increased

by combination with a vegetable bitter, like gentian or camomile. Where there is palpable increase of hepatic volume from hyperemia or hypertrophy, mercuric bichloride is probably the most efficient remedy, in small but long-continued doses—perhaps a fortieth of a grain four times a day. I have seen several cases of marked hepatic enlargement slowly disappear under the use, or at least *during* the use of bichloride, as above indicated. I think the intelligent and persistent use of these few remedies of much more avail than a greater number which are changed too often to allow any one to assert its power. In the use of alterative remedies—I should rather say the *successful* use of alterative remedies—time is the “essence of the contract.”

Diuretics or “renal eliminants” are constantly required in the treatment of plethoric lithemia. Among this class of remedies, potassic citrate clearly takes the first place, because it is a pronounced and aggressive eliminant, as the urinometer and ureameter have so often demonstrated. I prefer giving the freshly made salt, which is easily produced by throwing twenty grains of potassic carbonate or bicarbonate into a glass of lemonade, which the patient should swallow during effervescence. This may be given four times a day, *always* when the stomach is at rest, so it shall be absorbed and carried into the blood current as rapidly and with as little change as possible. The salts of lithium and of strontium are of value and may be used as temporary substitutes for the potassic citrate, but they are less efficient. The acetate and citrate of sodium are also quite efficient, but they also must yield to potassic citrate so far as regards the power of eliminating the nitrogenous waste products through the agency of the kidneys. Other diuretics need hardly be mentioned in this connection as they are not to be compared with those already named.

These plethoric patients should be sent every few days to take a Turkish or Russian bath (they are about equally barbarous), as they aid elimination by the skin immensely. They should also be made to take the requisite amount of open air exercise, and nothing is better than vigorous walking, although bicycling or horseback riding answer equally well.

But all this “availeth naught,” unless it is kept up for long

intervals; it is of no use to pursue the plan of daily treatment and general regimen indicated by fits and starts only; it must be followed out in all its details, as long as necessary, and it must be resumed when necessary, until the absence of symptoms cease to indicate the necessity for its resumption.

2. *The Neurotic Type.*—Very many of the so-called “nervous temperaments,” “neurasthenics,” and “nervous cranks,” as well as most of the cases of “nervous dyspepsia” are in reality cases of the neurotic type of lithemia. In other words, quite a large proportion of the cases which are classed as “neuroses” are primarily lithemics with overstrained nervous systems, which become intolerant of the uric acid toxemia. Hence, the “nervous” symptoms and their name is legion. Hysteria, melancholia, migraine, epileptiform seizures, cardialgia, and various other “algias,” together with a multitude of minor nervous phenomena not worth naming, combine to give the neuro-lithemic a reputation as unique as it is undesirable. In the treatment of these unfortunate people, nothing is more important or useful than rest—rest of mind and body—a prolonged period of absolute separation from business or household or family cares. If the patient is a good sailor, nothing is better than a sea voyage; a quiet sojourn at the sea shore comes next, with special emphasis on the “quiet.” Some cases are greatly benefited by farm life and its freedom from the exactions of society. “Anywhere out of the world” of fashion and wearisome parade. Plenty of sleep, plenty of outdoor exercise, with some athletics, like rowing, bowling, quoits, the health-lift, or whatever the patient fancies in that line.

As to medicine—begin with a few doses of calomel, in minute doses, several times a day, and a morning aperient of a teaspoonful of Rochelle salt in a glass of lemonade; follow this with a five-grain lithium tablet, four times a day, in a glass of water, when the stomach is off duty, and let this be kept up for several weeks, unless it shall be found that potassium or sodium citrate answers better, and this question must be answered by frequent appeals to the ureameter and urinometer. After the torpid scavenger organs have been aroused and elimination is fairly established, a neuro-tonic will be required. The phosphate of iron, quinine and strychnine (“Aitkin’s tonic”), does

admirably, and may be prescribed in either pill or syrup, *immediately* after meals. Most of the preparations of iron are not well borne, but I have had good results follow the use of dialyzed iron and the old Quevenne's "iron by hydrogen" in rather small but persistent doses directly after eating. But neuro-lithemics do not bear heroic dosing of any kind. Every now and then the digestive tract will falter, the appetite will fail, flatulence, constipation, nausea, and all the remaining adjuncts of "acute dyspepsia" will suddenly appear. This will necessitate a suspension of constructive tonics and a return for a few days to the minute doses of calomel with an antiseptic, such as salol. But the tonics should be resumed whenever the digestive tract resumes its work in a normal manner.

Many neuro-lithemics are much troubled by insomnia. This may sometimes be effectually relieved by massage an hour before retiring. A dose of bromo-caffeine, or of caffeine-hydrochlorate, or of ammonium bromide may be given, or even of codeine if it can not be avoided. A drive, or a short spin on the bicycle, or a walk after dinner will promote sleep. A sponging with cold water containing a little alcohol is an excellent hypnotic; and I have even had good success with a "dummy" consisting of a capsule with some indifferent powder, like sugar of milk. But restful sleep must be secured some how. Alcoholic stimulants can not be recommended in any form, but a glass of claret at dinner is as harmless as anything, if the patient *must* indulge.

The question of diet can be disposed of in connection with the next group of cases.

3. *The Anemic Type*.—This type is not quite so common as the other two, but it is by no means rare. The patients are mostly women who have been overworked mentally or physically, or both; frequently young mothers who have borne children rapidly and have been burdened with their care; or saleswomen who are required to stand all day in a constant state of tension and excitement; or ladies who are engaged in clerical work; or school teachers who find their vocation irksome and exhausting. Of course males as well as females may belong to this class, but females are clearly in the majority in my practice.

The successful treatment of this type presents some very

practical and perplexing difficulties, for it must constantly be borne in mind that we are treating anemia *plus* lithemia, or *vice versa*. In the first place, the patient must be allowed a moderately liberal flesh diet; in the second place, elimination *must* be made to keep pace with the demands made upon it. As to diet—milk of course, but not of necessity, for there are some patients who can not assimilate milk and who invariably get gastro-intestinal irritation if they attempt it. There are also many people who *think* they can not take milk, because it makes them “bilious” or “constipated,” as indeed it may, especially if it be taken in a faulty and injudicious manner. If a patient with rather feeble digestion drink rapidly a pint or half pint of cold milk, without any solid food, it is quite probable that some kind of gastric revolt will follow, and especially if this experiment is repeated again and again. Or, if a patient attempts to drink milk according to some cast-iron rule—so much milk at such a time—gastro-intestinal revolt will be likely to follow. But if milk is made a part—even the chief part—of breakfast and luncheon, so that it is taken with other food, it is rarely the case that any trouble follows. Hot milk is sometimes borne better than cold milk; a pinch of bicarbonate of soda in a glass of milk frequently prevents eructations; with other people a pinch of common salt will do the same thing. Let the physician study the question himself in its relation to each individual case; then let him engage the intellectual and willing co-operation of the patient, and he will encounter very few failures in his endeavors to substitute a milk for more injurious forms of diet.

Fruits are not objectionable; in fact, they are beneficial in almost all cases; vegetables, if they agree, may be allowed; cereals are to be commended with scarcely an exception; fish, fowl and most kinds of game may be allowed once or twice a day. Sweet meats and the various culinary frivolities, which have little or no nutritive value but great possibilities as producers of gastric torment, should be debarred entirely. Tea, coffee and chocolate may be allowed in moderation; alcoholic beverages had better be let alone.

But what about beef, pork and mutton? They should be allowed once a day, in moderation, in spite of the fact that it is

a violation of physiological orthodoxy. An anemic patient must be *nourished*; if he or she happens to be a lithemic, it is still necessary to insist upon a blood-making diet, but at the same time the lithemic tendency must be anticipated and guarded against. But it is a waste of time and effort to attempt the restoration and up building of a case of anemic lithemia if a diet of red meat is excluded. And just here I wish emphatically to insist that the danger from red meat is not from its use but from its abuse. A moderate amount—or, more aptly, a *requisite* amount—of red meat is never harmful, even to a plethoric patient; the difficulty is to decide upon what is a “requisite” amount, and this can not be trusted to the judgment of a hearty, hungry, plethoric man who is lithemic, and hence we are compelled to protect him by a process of exclusion. But the case is very different when we are dealing with ill nourished, neurotic or anemic cases of lithemia; they must be nourished according to their necessities, regardless of the general laws laid down by Alexander Haig, Boix, and others, which are entirely correct as abstract scientific propositions, but which do not and can not apply to all individual cases. It is for the physician to remember that *he* is treating the particular case in hand, and that Haig and other excellent writers have never seen the patient and therefore can not be trusted as to details. Time and again I have seen cases of anemic lithemia improve upon a diet of red meat, after a long and futile trial without red meat, and some of these cases have been markedly arthritic, slightly albuminuric, with pronounced arterial tension. But they had tried milk and cereals and fats and malts and the various artificial “make-ups,” which we all know by “samples,” their wonderful effects attested by wonderful doctors, but they did not improve in health and vigor, while the urine remained loaded with uric acid and the arthritic symptoms lingered. They generally expressed a longing for red meat, or, as one woman expressed it, she “hankered” for a mutton chop. She got it, and on a moderate or “requisite” mixed diet, including a ration of beef, mutton or pork, once a day, she improved slowly but continuously. I have so very many times observed that a restricted, forced, “eat-by-rule” diet is followed by failure of renal function, that I am inclined

to formulate an axiom something like this: "An unwelcome diet induces renal inadequacy." Of course it induces other unfortunate results, but I am dealing particularly with the renal aspect of the subject. These observations on diet and nutrition apply with equal force to many cases of neurotic form of lithemia.

Little need be said as to the medical treatment of anemic lithemia. The general principles of the anti-lithemic treatment apply: Cholagogues will be needed; gastro-intestinal antiseptics; gentle aperients; alkaline anti-lithics; vegetable tonics; preparations of iron, manganese, phosphorous, and bone-marrow; these are the remedies which will from time to time—and for a long time—be required. But they must all, and invariably, be given in small doses, else they will do more harm than good.

In conclusion, I will venture a few words of counsel, because I hope this paper will fall into the hands of some younger practitioners who are still wrestling with the perplexities of anemic and neurotic lithemia.

First—Study each case as an individual entity—not as one of a "group of cases."

Second—Do not expect or promise rapid, perfect or permanent cures, since it is impossible to change the innate nature of any human being by any mode of "treatment."

Third—Do not cease treatment, or allow the patient to pass out of notice when the urgent symptoms have disappeared; a considerable period of mild or alterative treatment will still be necessary to reach the best results.

[70 State Street.]

A Man with a Quiver Full—A French Canadian living in a Rhode Island town was recently presented by his third wife with his forty-first child. His first wife gave birth to several pairs of twins, and his second presented him with three sets of triplets. Thirty-six of the children are living and many of them have families of their own. Eight of the grandchildren also are parents.

Aneurysm; With Reports of Several Cases.*

By LOUIS H. BEHRENS, M.D.,

ST. LOUIS, MO.

CHIEF OF CLINIC FOR DISEASES OF THE CHEST, MEDICAL DEPARTMENT
WASHINGTON UNIVERSITY.

Read before the Medical Society of City Hospital Alumni, March 1, 1900.

IT may not be out of place here to review grossly the structure of an artery such as we are about to consider. As is well known, an artery is made up of three coats or tunics, viz.: the intima or endothelial, media or muscular and elastic, and the externa or external cellular coat.

The tunica intima is composed of pavement epithelium and cells of various types, having a fenestrated elastic membrane; the coat is proportionately thickened according to the size of the artery, which is especially marked in the aorta, where it is found much so.

The tunica media has a circular arrangement of its muscular fibers, the elastic fibers also assist in its formation, they being found abundantly in the aorta and less in number as we leave the heart along the arterial tract. As the blood is forced from the left heart, during the systole, a distention of these fibers is produced, and necessarily contraction must follow in order to assist the blood current onward, the greatest force falls upon the aorta, very pronounced in the first part; the power required to resist and propel is found in the middle coat, and therefore the necessary thickening due to the numbers increased in strength of the elastic fibers is very perceptible, while in the smaller arteries this extraordinary demand is not made upon them for work, hence diminution of these fibers; and in the very small arterial tracts they are absent, the muscular being predominant.

The tunica externa or adventitia is composed of some

*The discussion on this paper appeared in the May (1900) number, page 382, of the COURIER.

elastic fibers in the larger arteries which are absent in the small. In the larger vessels this coat is thin, becoming relatively thicker in the smaller arteries, more so than the media, and is made less largely of muscular fibers.

So much, then, for the structural consideration of the normal artery.

Now, when through some congenital or acquired weakness, one or more of the arterial tunics give way, a distention or dilatation at the point of least resistance is the result, the tumefaction assuming a certain form (accordingly classified) gradually increasing in size, involving one or more of the coats, using the same as its covering, depending upon shape and locality of the enlargement. This tumor contains blood and communicates with the artery and is styled an aneurysm.

As I have just stated some congenital or acquired defect must exist, we will dismiss the former as the cause, as it is rare so far as we are aware. The latter cause then being considered, a few of the specific or constitutional diseases as etiological factors in producing degeneration of the tunics may be grossly reviewed.

Upon observing an aneurysm our questioning is along the line of syphilitic, rheumatic, alcoholic, nephritic, diabetic, or gouty history, suggesting to our mind arteriosclerosis, which has then reference to degeneration and inflammatory disease of the vascular system with secondary fibroid changes in other organs; this degeneration may remain confined to a definite region in the arterial tract or become general in the vascular system.

In the earlier stages of arteriosclerosis, when degeneration of the media has occurred and before compensatory thickening of the intima has taken place through favorable exciting causes, aneurysm is liable to develop, the determining factor being some severe strain or exertion which raises the blood pressure and at the diseased area (the point of least resistance) a dilatation of greater or less degree is the result. The patient at times is aware of "giving way" of something and often is the first indication of beginning aneurysm in the thoracic region.

The changes in the tunics in the beginning of degenera-

tion may be defined grossly as being about so. Köster says that we first have the infiltration surrounding the vasa vasorum of the media and adventitia, the muscular fibers of the media undergo hyaline and fatty changes, after which the sub-endothelial tissue of the intima proliferate and produces the sclerotic plates which are plainly seen in post-mortem, hyaline in appearance; this sub-endothelial thickening may be regarded as a compensatory effort to offset the weakness due to this alteration in the media and adventitia and also to preserve the lumen of the vessel. Sometimes the muscular fibers of the media are fatty and necrotic, so that the identity of muscular tissue is lost.

Arteriosclerosis is commonly found in the aorta, most prominent and more frequently in the ascending part of the arch, and diminished progressively as we leave this portion.

Then with this pathological condition of the artery, demands are made upon the heart muscle to perform an extra amount of work, the resiliency of the artery being less, hence the inability to assist in forcing the blood current onward. Naturally hypertrophy of the left ventricle is the result of this demand for overwork, the heart's force being then greatly increased compared to the weakness of the arterial tunics. Aneurysm is the sequence in many cases.

The information just cited will perhaps give an idea of the area involved mostly. Seventy-five per cent. of all aneurysms are found in the thoracic aorta, 50 per cent. of which are in the ascending portion, one-fourth or more in the transverse, one-eighth in the descending part, and with greater infrequency the innominate and subclavian arteries are involved. The farther from the heart the lessening in frequency of aneurysm.

They are classified into tubular or fusiform, sacculated, dissecting, arterial varix, circoid, and other uncommon forms.

Age has its influence, as between the thirtieth and fiftieth years the arteries lose their elasticity to some degree, while the heart's force is the same; therefore, in the young, aneurysm is exceedingly rare.

Occupation requiring exertion is prone to cause aneurysm, when previous arterial degeneration exists. I recall two cases, seen at my clinic at the Medical Department of Washington

University, in which this was well demonstrated. One was a hod-carrier, 62 years of age, the other an iron worker, 52 years of age.

The former was ascending a ladder with a hod of mortar weighing 200 pounds or more. Upon making an extraordinary reach for the top rung of the ladder he felt pain, and something give way (as he expressed it) over the sternum and he had to stop work. He supposed he had strained his chest, so to speak. Several days later a probable aneurysm was diagnosed in the ascending part of the aorta, which became very marked, and all symptoms of pressure attendant, and later the expansile tumor presented; the valves were all leaking and the heart becoming typically a *cor bovinum* and tumultuous. Tracheal tugging was manifest and within a short while, after much suffering, dissolution resulted.

The other patient was lifting some ironware from a deep barrel; he felt a pain over the sternum, not so severe, but lasting several days. He gave it very little attention for some time. He came to the clinic, and examination showed marked dilatation over the ascending and transverse part of the arch; the radials were in the beginning stages of arterial degeneration.

Both cases gave a history of rheumatism dating back several years.

Among the type due to trauma, I desire to mention one I observed at the City Hospital.

Patient was 31 years of age. Attempted suicide with a large knife, and had penetrated the carotid artery on the right side just sufficiently to materially weaken the outer and possibly the middle coat. The arterial wound was not noticed. The large gaping wound of the neck was sutured and healed by first intention. The dressing was left on for several days; upon its removal a small expansile tumor was noticed which developed to about the size of an egg within six or eight weeks. He refused to undergo the operation of ligation of the artery and left the hospital, nothing being heard of him afterwards.

The following case was presented to this society several weeks ago, but for the benefit of those who were not present, I will again give its history:

E. T., 35 years of age, married; occupation, laundress.

About fifteen years ago she had an attack of acute inflammatory rheumatism; was bedridden for several months, with no apparent after-effects except occasional twinges imitating rheumatism. She contracted syphilis about nine years ago, for which she was treated—in a way. About one year ago, while performing very hard work, such as lifting and ironing, she experienced pains over the left supra-clavicular region, extending post-cervical and over the shoulder. Soon a small expansile tumor was observed which enlarged rapidly and became progressively and constantly painful, the pain becoming more paroxysmal during night, and, as the tumor enlarged, much distress was felt down the arm and forearm, with marked edema, later, of same.

Examination revealed an aneurysm of subclavian, second part, easily diagnosed at this time, besides a heart that is much hypertrophied and leaking in the tricuspid, mitral and aortic valves, double murmurs in each.

I recall a similar case in which pain and expansibility were not so well marked, in which a diagnosis of abscess was very ignorantly made, and the patient was ordered to poultice same and return next day and have same incised. Fortunately, the patient feared the knife and did not return.

I also have the records of three cases in which it was impossible to obtain a previous history of any disease that would tend to weaken the arterial walls. All were subclavian aneurysm. One occurring in a laborer after a period of hard work; another two years after patient had fallen on the right shoulder; the third one with a history just as vague. All were males over 40 years of age.

It is to be noted, then, that age, occupation, sex, specific and venereal disease have important parts as predisposing factors.

When a case presents itself with all signs and symptoms so clearly defined, no special diagnostic acumen is necessary to make a proper diagnosis in those arteries that may be readily felt. But when the arch of the aorta is involved, one is often non-plussed and the true condition is often discovered too late for the treatment to be of much benefit. Where it is possible

to make an early diagnosis, advice and treatment will in many cases be of some service.

In the two first cases mentioned in this paper, the sense of giving way together with pain felt by both on an attempt at over-exertion will be recalled, and the *New York Medical Journal*, (February 24, 1900), contains an editorial entitled "Some Early Symptoms of Thoracic Aneurysm," which is an abstract of a paper written by Dr. A. S. Eccles (*West London Medical Journal*) which contains most valuable information.

The first patient being a physician, diagnosed the nature of his malady as aneurysm, by the excruciating pain in upper chest and right shoulder and by a fear that would come over him when riding, causing palpitation, and especially noted when resting in a barber-chair with head tilting back, which would cause increased cervico-bracheal neuralgia.

The other patient sought advice for neuralgia of the right arm, and extreme nervousness when traveling, which at times necessitated his quitting the train at some way station to rest from this sensation. When shaving, he felt sick and faint. A heavy overcoat caused burning over the seventh cervical vertebra, which was found extremely tender on pressure.

The other two cases reported were two brothers. Pain was felt by both patients when throwing head back, also between shoulders; attacks of vertigo when exerting. In none of these cases were the patients excited over heart disease or great vessels. The pain is distinct after exertion, the pressure-symptoms marked before perceptible tumefaction had begun. The pain radiating down the arm and upper chest and between the shoulder simulating a neuralgic attack, a sense of fatigue, vertigo, head bent back, attended with above symptoms should arouse our suspicions.

After an aneurysm of the thoracic aorta has progressed, it is difficult to promise how much effect treatment will have; some satisfaction exists in forming some conclusions as to the location of the tumor.

Aneurysm of the ascending aorta most often involves the right anterior wall of the vessel and projects forward to the sternum and may absorb it and the cartilages of the ribs on the right side. Tumor pulsates, expansile, at times enlarged,

veins noted in the skin on palpation. We can feel buzzing or whizzing. The radial and carotid pulse are usually smaller on the right than on the left side. Also attendant insufficiency of the valves with hypertrophy. Heart may be displaced to left and at times pressure on the recurrent nerve.

The transverse aorta lies on the trachea, esophagus, and thoracic duct; the recurrent laryngeal nerve winds around it. The usual site is the right aspect of the transverse arch. It may press upon the trachea and cause cough upon respiratory effort. The pressure upon the laryngeal nerve causing husky voice simulating edema of the glottis, and the interference to the blood-current be such in the innominate, carotid, and subclavian arteries on the left side, causing diminished pulse volume. It may appear as a tumor in the right or left bronchus, close to trachea, this part being directed to the left and backward, the same as the aneurysm itself. Pain over the back between shoulders and radiating around the chest, is almost a constant symptom, depending upon pressure of a tumor on nerves. Pulse in abdominal aorta is delayed. Pressure on left bronchus and lung may occur.

Aneurysm of the innominate produces symptoms similar to those of aneurysm of the ascending aorta, all pointing higher upon the chest.

[5 South Broadway.]

An Unique Coincidence in Abdominal Surgery; Appendectomy and Oophorectomy in the Same Patient; Perfect Recovery Within Five Weeks.

By HENRY H. SUMMA, M.D.,

ST. LOUIS, MO.

THE learned Dr. O. Falk, of Hamburg, has a contribution in *Centralblatt für Gynäkologie*, No. 7, 1900, entitled "Beiträge für Bedeutung der Appendicitis für den Geburtshelfer und Gynäkologen" (The Significance of Appen-

ditis for the Obstetrician and Gynecologist). A review of this valuable paper by Dr. Jaffé is as follows :

Falk cites the case of a woman, 34 years of age, VII-para, in the sixth month of gestation, who was taken with epityphlitis resulting in an abscess. The abscess was opened, the appendix extirpated, the wound drained. Recovery, normal. Labor at full term. Falk called attention to the difficulty of making a diagnosis of epityphlitic abscess and lesion during pregnancy, and recites two other cases. One, in which a diagnosis of an epityphlitic abscess was made. The operation, however, revealed a cystic degenerated ovary, twisted around its pedicle. In the other case, Falk found, instead of an extra-uterine pregnancy, a pyosalpinx in contact with an inflamed appendix.

The case which came under my care will corroborate and broaden the above statements.

On March 18, 1900, at 11 P. M., I was called to see a woman, 32 years of age, II-para, who had suffered from great abdominal pain since the early evening of the previous day. At this period a physician had been called in who gave her several doses of morphia. Instead of getting relief, she became worse, and vomited everything taken into the stomach. When called to see her at that time I learned that she had suffered for sometime from painful attacks in the ileo-cecal region. Constipation and diarrhea occurring alternately. The time of the present attack coincided with the date when she should had menstruated. On being questioned, she denied that she was pregnant, or that she had in any way interfered with that condition.

On palpation and pressure over the right iliac region marked pain was elicited. Some pain also was expressed by palpation and pressure over the right inguinal hypogastric and left inguinal regions. A vaginal examination was absolutely negative for any pathological condition. There could be found neither discharge, pain nor swelling. There was no pain or swelling on either side of the uterus or in the cul-de-sac of Douglas. A combined examination revealed a diffused pain of the lower part of the abdomen, more so on the right than on the left side. My diagnosis was appendicitis, probably perforated, and consequently a peritonitis of the lower abdominal region, thus causing a disturbance of menstruation.

I ordered the application of ice-packs over the ileo-cecal region, calomel and salol, and ice. Before my arrival Epsom salts and rectal injections had been given, but without the desired effect. She was in

formed that it was more than likely that in the very near future an operation would become necessary.

On the evening of the same day (March 18th) the husband came to the office stating that his wife was feeling and resting better. Treatment was continued until my arrival the next morning.

March 19th. At this period the subjective symptoms seemed to have improved, but the objective symptoms—pulse, temperature, and pain on pressure, were rather less favorable.

The patient was then sent to the hospital, where, on March 20th, I made the well-known incision for appendicitis, finding a small highly-inflamed appendix which was perforated near the cecum. Within the perforation a small enterolith and a few drops of pus were visible. Ligation and excision of the appendix and suturing the stump and the application of a few drops of liquified carbolic acid, which I use in such lesions very freely, ended this operation.

But, alas, to my great surprise, while I was replacing the bowels into the abdomen a gush of blood occurred from the wound. The blood was dark and partly coagulated. Remembering from the previous history, that menstruation should have occurred three days before but did not appear, I formed the opinion that there was possibly a rupture of some kind from extra-uterine pregnancy. I inserted my left hand through the incision made for the removal of the appendix down into the pelvis but found that the right ovary and Fallopian tube were intact. I directed my hand toward the uterus and found that this organ was of normal condition. I then tried to reach the left Fallopian tube and left ovary. The tube was not enlarged, but when I grasped the ovary I found this organ larger, somewhat spongy, and the hemorrhage ceased at once. Pressing now with my fingers the left ovary and tube and drawing my hand from within the pelvis up in the median line of the abdominal wall, using the dorsum of my hand as a guide for the incision in the linea alba, I found, to my surprise, an extra-uterine pregnancy—an ovarian pregnancy. The fetus was of the size of the first month of gestation.

After ligation of the ovarian ligaments, excision of the ovary, and suturing of the broad ligament, the hemorrhage ceased. A slight hemorrhage resulted from the tearing of the ovarian artery, but not enough to cause any alarm. A sterilized gauze tampon was somewhat firmly pressed into the pelvis and the incision, with the exception of an inch, sewed up. When the closure of the median incision was completed I then sewed up the wound necessary for the removal of the appendix. Healing took place by first intention and a perfect recovery was the final result.

Two weeks after the operation the patient was given full diet. On the fifth week patient left the hospital perfectly well. The specimens were presented to the St. Louis Medical Society March 31st for inspection and discussion.

Operations for appendicitis are not rare at the present time. Operations for extra-uterine pregnancies are somewhat rarer. The two pathological conditions, as in this case, I believe have never been described before. Concerning the possibility of ovarian pregnancy, I would refer the reader to the most valuable paper written by Dr. Katherine Van Tussenbroek, of Amsterdam, Holland.

Dr. J. Ross, Pathologist of the St. Louis Medical Society, is making a microscopic examination of the specimen of the extra-uterine pregnancy from this case. The results of this examination will be embodied in a later paper on ovarian pregnancy.

[3707 North Eleventh Street.]

Report on the Use of Diphtheria Antitoxin Prepared by the City of St. Louis.

By WM. SHIRMER BARKER, M.D.,

ST. LOUIS, MO.

Read before the Medical Society of City Hospital Alumni, April 19, 1900.

DURING the past four and a half years it has fallen to the writer to treat eighty-one cases of diphtheria with the antitoxin furnished gratuitously by the Health Department of the City of St. Louis, and with this antitoxin I was surprised to find that there was not a single fatality where opportunity had been given to employ it with any degree of promptness; or, in other words, that in every case in which there was not a priority of other treatment with perilous delay, recovery occurred. Four deaths were recorded and in each of these four cases valuable time was lost in the employment, under medical direction, I regret to say, of unreliable measures.

It was to me a matter of early observation that the untoward effects of antitoxin administration were needlessly exaggerated, that deaths thereafter were evidently *post hoc* not *propter hoc*. I therefore undertook to administer antitoxin in maximum doses. This would have been impracticable in the homes of the poor without the city's gratuitous assistance, and I imagine the conscientious physician without such assistance might soon, through oft-repeated outlays to supply antitoxin to those unable to purchase it, arrive before his time at that condition of impecuniosity from unrequited service, which has, alas, been the lot of many worthy men!

These cases were almost without exception verified by bacteriological test. The exceptions were perhaps half a dozen, where, through lack of opportunity, the cultures, though made and laid aside, were not examined. In these very few unverified cases the clinical history was such as to preclude all doubt as to the presence of true diphtheria.

Occurring during a period of about five years, these cases included all varieties of epidemic, from the mildest to most severe. Hence, the statistics are not open to the objection to deductions from diphtheria statistics embracing one season or one year with one type of diphtheritic virulence only.

All these cases received what is ordinarily quoted as the full adult dose of 1500 units. Many received much more than this, and some as much as 5006 units, within four or five days. To summarize: There were eighty one cases, with four deaths, or 95.2 per cent. recoveries; or 100 per cent. recoveries where city antitoxin has had a free and early employment. In view of these facts two deductions seem proper—first, that the diphtheria antitoxin furnished by the St. Louis Health Department is of a high grade of efficiency and reliability; second, that the prompt and very free use of antitoxin gives practically a diphtheria record free from fatalities.

In presenting this short report with its deductions it might not be amiss to disclaim anything of the boastful spirit. For one does not have to deal with the intricacies of disease and therapeutics many years to feel assured of the truth of the saying of old that "pride goeth before destruction, and a haughty spirit before a fall." The credit for what seems to me

the striking results in this report should be very largely given to those who have used their official opportunities for the good of the people of our city by placing within their reach in no stinted measure that which beyond doubt has checked the spread of contagion and saved from death many a child of promise. They have used their opportunities in office for the good of the people to whom it is understood they are beholden not a very common event in these days of victors and spoils. Too much that is complimentary can not be said of the good already done and the possibilities for manifold greater good as a result of the action of our City Health Department in the matter of gratuitous distribution of efficient antitoxin inaugurated under the direction of the Health Commissioner preceding in office the present incumbent and the able consulting bacteriologist. Nor is the present Health Officer one whit backward, I believe, in continuing this good work established by his predecessor. Let us trust that the benefits thereby accruing will be so manifest that the good work will not only go on but will expand with the broadening of well-established antitoxin therapeutics.

[1101 Tyler Street.]

Psychological Etiology of Inebriety.

By T. D. CROTHERS, M.D.,

HARTFORD, CONN.,

SUPERINTENDENT WALNUT LODGE HOSPITAL, ETC.

ALL cases of inebriety may be practically traced to four general divisions of causes. One called constitutional and inherited, the other from organic disease, the third from injury, and the fourth from functional disorder associated with exhaustion. Beyond this, certain general causes are apparent which should enter into the study of every case. First, what is the physical grade or level of the individual, and what is his mental capacity or intellectual and moral strength?

Does he belong to a degenerating family, or one growing and rising to higher levels?

What is the type and grade of the man, not so much his present condition, but the levels from which he started? It is answers to these questions which enable us to understand the origin, progress and something of the present condition of inebriety in the man. While such estimates are consciously or unconsciously made by all close observers, they are not thorough or prominent in the study of the causes. There are many families who are obviously dying out physically. In form and general development they are degenerates. Defective heads and bodies, defective organic and functional activities with low powers of endurance and vigor.

Other families exhibit mental weakness and incapacities to adjust themselves to the conditions of normal life. They are eccentrics drifting away farther and farther from lines of healthy, intellectual growths. Approaching regions of delusions and hallucinations, or levels of imbecility and weakness. Automatically they may conceal this real condition, and attract no attention in society. In both of these classes there is organic dissolution, and retrograde movement towards extinction. The nutrient, respiratory, circulatory, muscular, and nervous systems are imperfectly developed, and are early exhausted and incompetent for the work required. The brain activity is limited and can not pass a certain point of development. Beyond that point there is no progress, but a continuous falling back to lower levels of activity.

There is another level of organic and intellectual life that should be considered, which, while not inseparable, is often very distinct. The moral or the ethical conceptions of right and wrong. In one case a high mental and physical organism is associated with a low grade of morals. Not infrequently this ethical sense is wanting and where present is incapable of development, or after a certain period suffers rapid deterioration to extinction.

These different grades of individual life may vary widely, and may develop or degenerate along different levels. The intellectual and moral life not infrequently reaches practical dissolution, while the physical remains without much change.

There are other families who have evidently reached an uncertain level from which very slight causes send them down on the road to dissolution, or upwards to higher levels of life and activity. Children of eminent parents are often at this level, with high grades of development and low vitality, evolving or dissolving with the surroundings.

Having found the physical, intellectual and moral capacity of the man, and the levels from which he started, we next turn to a study of the conditions which have accelerated or retarded the subsequent dissolution.

Among the first may be mentioned nutrition. Included under this head are defective respiration from bad air, exhaustion from imperfect rest and sleep. Ill-nourishing foods, with over-nutrition and under-nutrition, noted in circles of wealth and poverty, and among persons who have special theories of food values, weaken the capacity of growth. In like manner bad air, imperfect oxygenation of the blood, irregular sleep, followed by states of starvation and exhaustion, have a profound influence over all development. Next in importance are emotional excesses and general brain indolence.

Any circle of life where the emotions are constantly excited by flattery, anger, praise, condemnation, appeals to the lower passions, pride of position, strain for power and wealth, religious and sexual tumults is degenerating.

Brain activity and brain exercise is a necessity to rise from the lower to higher levels of intellectual growth. Brain indolence lowers and enfeebles capacity for growth and encourages dissolution. Intellectual evolution is not reached through the emotions, but from the continuous effort to know and act in harmony with the ever-varying conditions of life. All advance of civilization and intelligence is simply an increase of brain-strength and ability, a capacity to rise above the surroundings, directing and shaping them to increase personal interests and strength. Degenerating environments are powerful factors in many cases where the brain is enfeebled and is on unstable levels. It is often a question of surroundings, whether the man descends to a lower level, or rises in an evolutionary growth. If degeneration has begun, almost any conditions that are exhausting and depressing will encourage it.

Certain societies and persons have a very narrow range of intellectual and ethical ability. They have a real contagious influence infecting others, bringing them down to levels and destroying all capacity for higher growth. Bad books, sensational papers which describe crime minutely, and appeal to all the lower passions, are educational influences increasing the degeneration and brain incapacity. Whatever ability, physical, intellectual or moral, the inebriate has received from his ancestors, the use of alcohol has lowered it to conditions which may be called pathologic or impaired physiology. This is always a deterioration of brain capacity and function, with defective ethical power. The inebriate is on the road to dissolution. He may be far down, or just beginning, but it is certain he is fast descending to savagery and imbecility.

The fact that alcohol has a special effect on the nerve centers of the higher brain, explains why it is used as a beverage. This is the effect which the inebriate enjoys. The paralyzing action of alcohol on these centers diminishes sensation and motion. Hence, the inebriate thinks he feels better because of lowered sensitiveness. This benumbed condition lessens pain, discomfort, sense of exhaustion, and is interpreted as pleasure. Beyond this there is lowering of the brain ability to think and adjust conduct. The moral and ethical sense is palsied. The chemical descent will vary from the comfortable feeling of numbness to complete anesthesia; the intellectual disability from slight mental confusion to complete dementia, and the ethical sense from slight changes to wild madness of conduct. Weak, degenerating brains will go down quicker than stronger ones, and low, level moral brains will sink rapidly to states of savagery. A single drink paroxysm in certain defective organisms may precipitate the brain to very low grades of activity.

The variations between physical, mental, and moral capacities are not recognized in early studies of the inebriates. The precocious boy and man exhaust their resources and power for development, then retrograde. Alcohol is impulsively used to cover up the discomfort of oncoming dissolution. The moral defective can not adjust himself to the normal conditions of society, hence friction, perversion and exhaustion, and the

grateful palsy of alcohol. The unstable and emotionally disturbed man or woman finds in alcohol chemical relief.

The man or woman who has passed the summit, and begins the retrograde march, and the mental bankrupts, and the intellectual and physical defects, all find "nepenthe" in the anesthesia of alcohol. Nothing eliminates so readily and delusively as alcohol, particularly of low grade, irregularly formed, physical and mental organisms.

It is a study of these early conditions that clears away the mystery of cases of inebriety occurring in children of eminent temperate parents; also in persons of high character in excellent surroundings, and others who give no intimation in conduct or thought of this form of disease.

The Regulation of the Practice of Medicine in Maryland.—There was recently introduced into the Legislature of Maryland a new bill to regulate the practice of medicine. It is similar to the bill at present before the committee, creating two State Boards of Medical Examiners, and regulating the fees, emoluments, and duties of these boards, with some slight changes. The principal difference between the bills is that the new bill exempts graduates of medical colleges from examination before the State Board, allowing them to practice after receiving their diplomas. The bill states: "This act does not apply to bona fide graduates of medical colleges, incorporated under and by virtue of the laws of Maryland, and authorized by their articles or certificates of incorporation or by the laws of Maryland to issue diplomas to graduates, provided that such college or colleges shall conform to the rules and regulations of the American Medical College Association."

Against the Fasting Cure.—A disciple in Philadelphia of a medical man who recommends starvation for the treatment of various diseases, having himself recovered from digestive disturbances under such treatment, has been recommending a similar course to others. That the method is not infallible is proven by the death of one patient. In this instance, however, death was not caused by the treatment but to "a cancer or ulceration of the stomach." The patient had fasted 15 days and showed marked improvement. The result in this case is like those occasionally reported by surgeons, in which death ensues although the operation is successful.

EDITORIAL.

THE MEDICAL SCHOOL OF THE FUTURE.

The revolutionary changes and the rapid advances made in the medical progress during the past twenty-five years has materially altered the character of medical teaching. Its constant trend is to a higher and a broader plane of knowledge.

The evolution of medical schools, in this country, whose finished product will compare equally with those of foreign countries, is yet in its infancy; few there are, but the number is increasing. The epidemic of mushroom medical colleges we believe has passed; the tendency is now to strengthen the best by separate endowment or by union with large universities, thus sharing in the many advantages which thereby accrue from such a union. With the increase of the number of institutions of this character there will be, as a result of the law of the survival of the fittest, a rapid decrease in number of those low grade; a condition much to be hoped for.

The presidential address of Dr. H. P. Bowditch, of Boston, before the recent Congress of American Physicians and Surgeons at Washington, presents this subject in a manner that shows a clear comprehension of present conditions and a discernment of future tendencies.

He points out, as one of the most hopeful signs of the times in the field of medical education, the growing tendency of the better schools to ally themselves to universities, and of universities to establish medical departments, and says that a medical school of the first rank will in the immediate future be connected with a university but with an independence on the part of the medical faculty who will decide all questions relating to methods in instruction and the personnel of the teaching-body. The interests and the welfare of the medical department will be better conserved by leaving to the collective judgment of a teaching faculty matters such as these, than to a governing body

which may not and generally does not include physicians among its members.

Owing to the lengthening of the course of study from three years to four in the best medical schools, comes the necessity, which he points out, for the shortening the A. B. course from four years to three for those who take that, preliminary to their medical education, so that the graduate may be able to enter upon his professional work at an age not in excess of that at which his European confrères begin their career as practitioners.

To the union of the medical college with the university comes a third and a most necessary factor, that of the hospital with its clinical facilities. It is only in this trinity that medical teaching will reach its highest success.

The elective system in medical education is given much thought in his remarks. By means of this the student is enabled, after a ground-work of the fundamental principles of the subjects, to give the larger part of his time and energies to a study of those branches for which he has the greatest predilection and which he expects to pursue in his subsequent professional life. The tendency, at the present time, is to take up the work in a special field at an earlier period in one's professional life than formerly, and this, sooner or later, will lead to the institution of the elective system in medical schools.

In the medical school at the end of the present decade, he believes that the laboratory method of instruction will be greatly extended, while the didactic lecture, though reduced in importance, will not be entirely displaced by other methods of instruction.

In arranging the course of study so that the entire time of the student is given to one branch, he believes that the best and most thorough results are obtained; while in regard to examinations, he thinks that the note-book and the records made by the student in his daily work are more reliable evidences of the knowledge that he has acquired than examinations at the close of the session which he hopes to see abandoned.

In many respects the growth and method of medical teaching will be along the lines marked out by Dr Bowditch, and we hope that his is truly a prophetic forecast. As the characteristic progressiveness of

the American people is such as to surpass all others, the time is not in the very distant future when we will lead in this respect as in many others, and notwithstanding governmental aid and support received by European universities, the tide of truth-seekers in medical science will be to, instead of from, our shores.

FOREIGN DIRT AND DISEASE.

Every city clinic in this country to-day furnishes proof of a steady lowering in the personnel of immigrants to our shores. Physically, as well as intellectually and morally, the change for the worse is enormous. Instead of the muscular, quick-witted, moral Irishman, or the sturdy, industrious, honest German, we now have the ignorant, treacherous Sicilian or the sordid, personally filthy Polish or Russian Jew. Whether the air of freedom is sufficiently antiseptic to cleanse them of their infectiousness; whether the tissues of the Republic can generate anti-toxins with sufficient rapidity to counteract the disease-producers thus infused into its veins, are questions as yet unanswered. Meanwhile, with characteristic American *laissez faire*, we do nothing to regulate this pollution of our population, that is, of ourselves, which must, of necessity, be far deadlier than any pollution of our air or water. Recent occurrences in the Bohemian quarter of St. Louis plainly show the moral status of some of the European savages we have admitted to our shores, and of their immediate descendents.

Once in four years we disturb and excite ourselves over questions of the tariff, of our monetary system, or of some economic or political matter. Doubtless these are of great importance, but side by side with these are other problems of far greater moment which we allow to work out undisturbed, either because we lack the power to grapple with them or because we underestimate their importance.

One of these is the Negro problem. Another is the rapidly increasing proportion of undesirable foreigners in our large cities. Few in the community have a better opportunity of making a close study of the latter element than the physician connected with a city clinic. It is, therefore, not inappropriate to discuss this matter before the medical public.

It is said that "cleanliness is next to godliness." We believe that in the work of reclaiming the degraded, the inculcation of cleanliness must of necessity come first in point of time. Probably our country readers, or those in the city enjoying an aristocratic practice, do not realize how much some of the recent arrivals to our shores stand in need of the Gospel of Soap.

The writer has had ocular proof that among some of our savages "made in Russia" the practice of sewing clothes on the children's bodies prevails. Sometimes face and hands are clean in places, but on removing the clothes of child or adult, the skin is found covered with a heavy coat of grime. In an extensive clinical experience among the children of Russian and Polish immigrants, we have failed in finding *one*, in several years, free from pediculi.

Can "nitre and much soap" ever wash these clean? The task is enormous. The physician who comes in contact with these people may do something by upbraiding them, by seeking (for the most part, albeit unsuccessfully) to shame them, and by pointing out to them the dangers of such a mode of life. The latter method is not so hopeless as might be thought, for these people, while ignorant, superstitious, poor, and filthy, are not devoid of natural intelligence.

Some of our educated and benevolent American Jews have begun a good work among their foreign brethren which is already bearing fruit among the rising generation. They have established schools in the midst of our modern Ghettos. Here the children receive not only the ordinary rudiments of education but are drilled in household economics. As a rule, they have to be taught the simplest operations, such as those of sweeping and dusting. Besides these, they are introduced to methods of care of their persons and several times weekly are put through the painful process of washing their faces and hands.

Many of these children harbor vegetable parasitic diseases. It is not long since favus was a curiosity in American clinics. Now it is relatively common. The various ringworms have become of far more frequent occurrence. Scabies also is on the increase, while superficial pus-infections, due to habitual filthiness, are seen daily.

An important matter is the rôle played by our public schools as

breeding and distributing points for these infections as well as for others more destructive to life. The lesser pests are bad enough. When we consider that it takes from six months to six years or more, under favorable conditions, to cure a ringworm of the scalp, and that it remains actively infectious during all of that time, it no longer appears a trivial matter.

We believe that there should be a systematic periodic examination of school children for the discovery of infectious disease, whether acute or chronic, with enforced isolation of dangerous individuals. Such a system is now in successful operation in New York and Boston, and, we believe, in Chicago. A year ago the Medical Society of the St. Louis City Hospital Alumni carried out the work through a committee of volunteers in a number of our schools, for a period of six weeks, as a demonstration. The value of the system was fully acknowledged by the Board of Education, but the matter ended there, for the present, for lack of funds.

Let us contract filth diseases, for we can not afford the expense of cleanliness. Let us have rioting and murder in our streets, for we can not afford to pay for the militia. Grand Old St. Louis! Grand Old Missouri!

THE NEED OF LABORATORY WORK BY PHYSICIANS.

Laboratory work should be a part of every physician's and every surgeon's daily routine. It would seem unnecessary to make this oft-repeated statement in the face of the very great activity shown at present in chemical and microscopical investigation, but we believe that a visit to the office of the much abused "average practitioner," and often to that of his more noted confrère, would disclose a painful lack of the essentials to even the most simple laboratory examination of urine, pus, blood, sputum, etc. Many men think they are too busy to give attention to such routine work, but the facts are that often diagnosis is impossible without it and the time spent in listening to a long string of symptoms detailed by the patient and which may indi-

cate any one of a half dozen diseases, would be sufficient for a positive diagnosis if spent in the laboratory examining the result of the disease. While we would no doubt be somewhat bewildered if our patients were all deaf mutes, it would be conducive to better examinations—physical, chemical, and microscopical. No man possesses a divine intuition which enables him to make all diagnoses without doing the work, or having it done. And we believe the importance of such work is, to some extent, lost sight of, unless the surgeon or physician does at least some of it himself. Besides the time required, equipment is necessary, but this need not be very expensive, nor occupy very much space. An ordinary roller-top desk can easily contain everything required for routine work, and one-quarter the amount ordinarily invested in a horse and buggy will buy a very useful laboratory outfit. It is true that a much larger expense and more labor are involved in the ultimate determination of the character of new growths, unusual bacteria, etc., but we are now pleading for the work which can be done by the doctor himself without special preparation.

Laboratories where one can have this work done are becoming numerous, and many municipalities are providing a laboratory where the work is done free of cost. But we maintain that a working knowledge of the essentials of laboratory examination should be possessed by every practitioner and put to daily use for the benefit of his patients and himself.

Medicine may be—to use the anachronism of the cynics—an “uncertain science,” but much of the uncertainty may be removed and knowledge much increased by detail work.

SURGERY OF THE STOMACH.

Nothing serves better to illustrate the trend of modern surgery than the work which is being done at present on the stomach. More particularly is this true of gastro-enterostomy. Here it is that thinking men are awakening to a realization of the fact that it is not sufficient to be aseptic, to establish a fair sized opening and to do it quickly. In doing this operation, if one hopes for the highest measure of suc-

cess, he must take into account, not only the anatomical considerations but, at the same time, those physiological and pathological. Clinical restrictions of no uncertain kind make this imperative.

An article which was recently written by Prof. Witzel, of Bonn, exemplifies most beautifully this tendency in scientific surgery, to take a broad and logical view of possibilities and consequences in the treatment of the various organs; such surgery no longer contents itself with cutting and tying under aseptic conditions. The communication to which reference is made appeared in the *Deutsche Medicinische Wochenschrift* of this year, running through numbers 19, 20 and 21, under the title "Die Gastroenterostomosis, Gastrostomosis und ihre Verbindung zur Gastroenterostomosis externa."

The author calls attention to the fact that interference with the proper outflow from the stomach has, now and then, occurred after a properly performed operation, no matter what the method. Three circumstances are of vast importance in this connection, the pressure of forceps at the site of operation induces a paralysis of the intestinal musculosa, there is a marked disproportion in the muscular power of the stomach and of the intestine, then, finally, the motive activity of the stomach is greatly impaired by the disease, so that the emptying of the organ depends on a suction from the intestine. Furthermore, such suction may occur first in the proximal extremity as a result of the irritation produced by the bile, thus it is seen that the operation must, to promise success, give a reliable guide to the stomach contents, a thing which has not been properly dealt with in the past.

It is to be regretted that so many have died as a result of a faultless operation even where no symptoms of ileus appeared, this must be due in great part to the fact that such patients can not be properly nourished soon enough after the operation to tide them safely over the systemic exactions of the same.

All the above-mentioned requirements are met by an operative procedure which Witzel suggests. He takes a Nelaton catheter, No. 23, and performs the gastrostomy which bears his name, leaving the long end of the tube in the stomach. He next performs a *posterior* gastro enterostomy and draws the free end of the tube out of the stomach, to insert it into the distal gut, where it is fastened.

The patient can be fed at once and the food must take the proper course out of the stomach. At the end of two weeks the catheter is removed and, on account of adhesions which now hold the intestines in the relation to one another, that is desired, the stomach contents continue to follow the proper direction.

The results of the procedure have been exceedingly gratifying and it must be accorded the distinction of marking an epoch.

THE BUBONIC PLAGUE.

Less than a year ago we called attention to the danger of the bubonic plague gaining entrance to America through the port of San Francisco and to the probability of the infection first becoming manifest in the Chinese quarter of that city. During the past few months this condition has been realized. In the months of January and February of this year there was an increased mortality among the inhabitants of the Chinese quarter, from lobar pneumonia, broncho pneumonia, acute miliary tuberculosis, and typhoid fever, all of which may be simulated by the plague, and many of these are now thought to have been unrecognized cases of that disease.

On March 6, a dead Chinaman was discovered having the marked adenopathies that characterize victims of the plague, and this gave rise to the first suspicion of the true condition. Bacteriological investigation confirmed the diagnosis. Active precautions were taken to disinfect and otherwise prevent the spread of the disease in that quarter, and in spite of the fact of the development of one or two other similar cases, the report was sent out that there were no cases of bubonic plague in that city.

Later, however, the disease broke out anew, and on May 19, the Board of Health of that city made a public declaration of its presence. The Marine Hospital Service took charge and have probably succeeded in checking its spread, since no new cases have been recently reported.

The geographical situation of the city of San Francisco, resulting in intimate trade relations with the infected ports of China, India, and

with Honolulu, makes the liability of receiving the disease from those infected places very probable. Prompt and energetic measures are necessary to control its progress, since by these means it can be checked, as has been shown in Oporto, Portugal; in Cairo, Egypt; in Honolulu and in New York; in the harbor of which a steamer laden with coffee from Bahia, Brazil, anchored early in the spring, with five cases of plague on board. These were removed to the detention hospital and the steamer and cargo disinfected. No other cases developed.

The tendency to spread from San Francisco, as we called attention to before, will undoubtedly be southward, and should it cross the border into Mexico, it will be difficult to eradicate, owing to the conditions of life among the lower classes which furnish favorable opportunities for its propagation and spread.

The Biblical references to a disease, undoubtedly the plague, are of much interest. According to a recent medical writer, the bubonic plague is a disease hoary with antiquity. There are only two specific diseases (leprosy and syphilis?) to which any previous reference can be found. For the plague is no doubt the disease mentioned in Samuel I, chapters 5 and 6, which attacked the Philistines after the battle of Ebenezer where they obtained possession of the Ark, and which broke out in all parts of the country to which the Ark was sent, and which on the return of the Ark to the Israelites destroyed fifty thousand three score and ten of them.

The statements in the book of Samuel are certainly very curious in that they record not only one of the most important clinical features of the disease, viz, the appearance of emerods (*i.e.*, a tumor or bubo) in the secret parts *i.e.*, the inguino-femoral region); but also states that the Philistines in returning the Ark sent it back with an offering of golden emerods and golden mice. Why the mice? It must have been that the Philistines had noted the fact, now absolutely authenticated, that preceding and accompanying an epidemic of plague, rodents are attacked by the same disease and die in thousands, and constitute without doubt one of the most important factors in disseminating the disease.

Coming down to more strictly historic times, one can pass over numerous references to what may or may not have been plague, including, however, the undoubted epidemic of plague in the reign of Justinian in the sixth century, until we come to the fourteenth century, where under the name of Black Death we have plague in its most malignant form, carrying off by repeated recurrence more than one-fourth of the population of Europe. From this period on till the seventeenth century, with the intervening epidemic periods, the plague remaining epidemic in England and Europe. With the great plague of London in 1666 and the few years following, the disease seems to have gone out from England altogether. It can be traced, however, in Europe, particularly along the shores of the Mediterranean (Levantine plague) till 1841, when the plague left Europe by its eastern gate, Constantinople. It, however, only receded eastward to its epidemic centers in Persia, Mesopotamia and Thibet, and southward to the Uganda district of British East Central Africa. These are the homes of the plague. The present epidemic seems to have come from Thibet eastward to the Province of Yunnan in China, thence to Canton and Hong Kong, the distributing centers for the present epidemic. Commerce from these cities has carried the contagion to the various parts of the world.

Famine and Cholera in India.—A recent dispatch from Lord Curzon to the Secretary of State for India in London states that the famine conditions have materially improved in Madras and Mysore in consequence of the recent rains. In the remainder of the affected tracts the distress is increasing in intensity, owing to the want of fodder and water and the increasing heat. The number of persons now in receipt of relief is 5,617,000.

Regarding cholera, the Bombay correspondent of the *London Times* says that the disease continues to rage in the famine camps. There were 400 deaths in three days at Mandivee. So numerous are the cases at Godra that it is impossible to collect the bodies, and they lie for days in the sun.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of April 19, 1900; Dr. Chas. J. Orr, President,
in the Chair.*

Friedreich's Ataxia.

DR. M. W. HOGE presented a case of Friedreich's ataxia, and said: This is one of a number of nervous diseases known as hereditary, or family degenerative diseases and is classed by some neurologists in a large group of disorders affecting all portions of the nervous system from the cerebral cortex to the termination of the neurons and, therefore, including such apparently dissimilar disorders as hereditary chorea, cerebellar ataxia, ataxic paraplegia, Friedreich's ataxia and progressive muscular atrophy.

The cause of the various lesions found in the different affections is supposed to be a congenital deficiency either in the structure or the resistance of nerve tissue which permits a degeneration of the neuron tissue proper followed by sclerosis from over-development of the neuroglia and connective tissue. This particular form of the disorder in pure cases is a posterior lateral sclerosis, the changes being most marked in the posterior column of the cord. It usually develops at an early age, most commonly between the ages of 5 or 6 and 12 to 14 years. It comes on gradually and progresses slowly, with perhaps occasional interruptions, sometimes remaining stationary for a time, then advancing, its course extending over many years, terminating from asthenia or from some other intercurrent acute disease. The most prominent symptom and that which attracts the most attention is the ataxia, from which it takes its name. This ataxia differs from the tabetic type in affecting not only the legs but the body and arms, so that the character of the ataxia is that described as cerebellar. The

body has a rolling motion and the patient walks with legs wide apart. As in tabes, we have an abolition of the tendon reflexes. One prominent symptom of tabes, iridoplegia, is very rarely observed in Friedreich's ataxia. It also lacks the visual and the sensory disturbances of tabes, though, in this particular case, certain sensory disturbances are present.

It is distinguished from pure cerebellar ataxia by abolition of the deep reflexes and the absence of the various eye symptoms found in the cerebellar type. The early onset of the condition also distinguishes it from tabes which, while it does occur in young people, is rather rare. The only etiological factor of prominence is heredity. It is supposed to be due to deficient development and resistance of the nervous tissue, though the onset of the symptoms does sometimes occur after an acute disorder or an injury. The heredity is usually not in a direct line, for the obvious reason that the disease coming on early in life, its subjects do not marry, though there is a case on record in which the patient married and had healthy children. The hereditary feature is usually manifest in the disease occurring in other members of the family, as in an uncle or aunt, in a brother or a sister, so that several cases may occur in the same family in several generations.

This patient has been under observation since November 14, 1899. He is 16 years of age. He had typhoid fever at the age of 5 years. About 6 years ago it was first noticed that he was growing awkward in his movements. His development, physical and mental, was slow. He has worked for several months as a messenger boy and thinks he is still able to work, but says he lost his position on account of going out on a strike and not on account of his disability. The father is living and healthy, and gives no luetic history. His mother died of phthisis; he has one sister living, who gives no history of any nervous disease. The patient is rather small for his age; there is an expression of hebitude in his countenance; his speech is slow and monotonous; he sways very much when standing with feet together and eyes open, and falls with eyes closed; the pupils respond to light and accommodation, and a very slight nystagmus is present; the tendon reflexes are absent or present only in a very slight degree; the cutaneous reflexes are active; the muscles are well developed, yet several

physicians who examined him could not decide that there is any muscular atrophy except about the small muscles of the feet, which gives an exaggerated arch, and in some of the toes the deformity known as hammer toe.

A similar condition was observed in the case of peroneal atrophy which Dr. Campbell presented several weeks ago. On irritating the sole of the foot we get Babinski's reflex. This is considered pathognomonic of an interruption in the motor tract; it consists in the toes being extended when the foot responds to plantar irritation, and is a return to the infantile reflex; it occurs in infants before the motor tract has become medullated, and its occurrence in older persons is considered to be due to an interruption in the motor tract. The electrical reaction of the muscles is diminished. An unusual symptom in this disease is present in this case, namely, a diminution of sensation, which is more pronounced in the lower limbs. The temperature sense is diminished over the anterior and outer aspect of both legs and in the axillary region, and while tactile sense is also diminished in these regions, it is not to the same degree.

DR. S. I. SCHWAB had not had an opportunity of examining a case of Friedreich's disease pathologically, as the number in which autopsies had been secured were very rare. During 1897 there were about 14 cases published, and two or three of these were studied pathologically and microscopically. In 1898 there were 16 cases published and of these two cases were studied microscopically. There is comparatively little to depend upon for the pathologic study of this disease; the number of cases is limited.

The history of the disease is rather interesting. The first cases were presented in 1861 by Friedreich, but nothing was thought of it, and little attention paid to it for about ten years, when a similar case was shown by Carpenter. Almost another ten years passed before attention was again called to the disease, and then Gowers showed a case in London, and another in Paris by Brousse. This latter formed the first definite picture of the disease, and from that time it has been known as Friedreich's disease. Up to this time no pathological investigation had been made, and it was not until some years later that the first post-mortem was held.

The whole idea of Friedreich's disease has changed in the last few years. In studying this disease we often find many exceptions to the typical cases. Absence of the knee-jerk is found in the majority of the cases. The hereditary type, beginning in early years, was formerly thought to be a strong proof that the case was of this kind. There was recently published the history of a case in which the symptoms did not begin until after the 16th year. One of the first observations made was that the cord and medulla, and sometimes the cerebellum were smaller than normal. This was universally agreed upon, but the meninges and the blood vessels were not so affected. It was easily demonstrated that there was a posterior sclerosis of the cord with the center generally preserved. Further than this the sclerosis extended to the pyramidal tract, and in many cases to the direct cerebellar tract. This forms a picture which is known as the combined system disease; this distinguishes this condition from that of ordinary tabes, in which the posterior columns alone are sclerosed. An examination of the blood vessels showed no change in either of the two conditions. On close microscopic investigation there was found an intense neuroglia hypertrophy.

In 1891 it was thought by Déjérine and Letulle that they had found a definite cause for the disease, and believed that Friedreich's disease depended upon a congenital hypertrophy of the glia in the posterior columns, and in the column of Clarke, and that all the rest was secondary and due to a meningeal myelitic process. This was believed until Marie stated he had found no greater neuroglia hypertrophy in Friedreich's disease than in many other diseased conditions. Hypertrophy of the neuroglia came to be regarded as of no importance. There is as much doubt as ever in regard to the pathogenesis of the disease, and certainly as much in regard to the etiology.

Another interesting statement was made regarding the peripheral nerves; it was thought and accepted by a great many who wrote on this disease, that the absence of pains and other sensory symptoms indicated that the peripheral nerves were not involved—that these nerves were perfectly normal, and in this it differed from other types of posterior sclerosis.

In a recent case reported by Bonnus definite degenerative pro-

cesses were found in the peripheral nerves, and the usual appearances of a neuritis. Here, again, there is something of a contradiction, as in one certain group the post-mortem finding was that the peripheral nerves were normal, while in one or two isolated cases there was evidence of a neuritis. This patient died of pleurisy and it was a question, he thought, whether that was not a tubercular neuritis, as is often found in these subjects.

Another interesting theory was advanced when it was found in some autopsies that the cerebellum was small or atrophied. The attempt was made to explain the ataxia and a number of symptoms on this ground and the changes found in the cerebellum.

This probably grew out of a confusion of disease known as hereditary cerebellar ataxia, which was mentioned in the differential diagnosis. The cerebellum, however, as far as seen in the majority of cases investigated, is perfectly normal, although possibly somewhat smaller than is ordinarily seen. A number of French investigators think they see in a great many of these so-called congenital diseases, cases which are not congenital at all, but which have to do with infectious diseases of early childhood. The condition agreed upon by nearly every one, that this is a combined disease in which the posterior columns, the direct cerebellar tract, the column of Clarke and the pyramidal tract are involved.

DR. GIVEN CAMPBELL said that in the description of this disease we see that certain groups of neurons which are associated together to perform certain physiological functions are picked out for atrophy and degeneration, constituting what is called a system disease. We are also told that the same thing occurs in another disease—hereditary cerebellar ataxia, and many other diseases of a similar nature exist in which certain groups of neurons are thus picked out, but differing from hereditary spinal ataxia in the fact that the groups of neurons are different. The fact that these diseases have the peculiarity of appearing in the same family gives them the name of familial diseases. They do not necessarily appear from father to son. The father and mother marry, both being healthy, but in the ancestry of one of them there was one of these hereditary diseases, and probably several children of this marriage will suffer from one of these diseases.

In one case a mother, who by her first marriage had several children suffering from one of these diseases, inherited from her mother; married the second time and had children, all of whom were healthy. As a rule, too, these family diseases follow their own type. If a child is affected with a myopathy, which is one among this class of diseases, probably all the others affected will have the same kind of trouble, but this is not necessarily so, one child may be affected with one kind of symptoms and in another child the symptoms may be of a different type, so that the really important point is that there is a family predisposition to wasting, but while it is very probable that the wasting will be manifested in the same systems of the neurons in all those afflicted in a given family, it is not absolutely certain that this will be the case. This family predisposition: What is it? Simply that certain individuals bear offsprings in whom parts of the nervous system will waste. Just what is the cause of this is not known, but it is commonly understood that the parent does not transmit to the offspring either some substance or some developing energy, and that the nervous system of the child develops to a certain point, but there is not enough of this substance or energy left to continue the development, and it stops. Possibly the ordinary wear and tear of nerve activity plays out that part before the other parts, or that part decays and degenerates.

This heredity usually come through the female members of the family but is manifested in the male members. For instance, a man and a woman marry and have offspring—sons and daughters, the disease will manifest itself in the sons, the daughters being exempt, but the daughters in marrying will probably have in their direct children or descendents, male children who will be subject to the disease, the disease traveling down through the female child but being manifested in the male child. He thought there was a tendency transmitted in the female for some part to not develop, and this forms a type, but that the important point is not the type but the condition underlying the forms of that type—that hereditary weakness—and this tendency binds all of these family diseases rather closely together.

DR. JOHN GREEN, JR. thought that the most prominent ocular symptom in a typical case was the nystagmus, which could be subdi-

vided into ataxic nystagmus, manifest when the eyes are turned on a near object, and static nystagmus, present when the accommodation is at rest. This patient does not exhibit the symptom in any marked degree, though he thought he could detect a slight oscillation when the eyes were turned strongly to the right or left. This, however, might be nothing more than the physiological nystagmus evoked when the eyes are turned very strongly in any given direction.

Other symptoms occasionally met with, were strabismus with diplopia and ptosis. The patient did not exhibit the former symptom, and the latter, if present at all, was in a very slight degree. Another symptom often seen is a sluggish pupillary reaction which, however, he did not find in this patient.

From the cursory examination he had been able to make of the fundus, he found both optical discs decidedly paler than normal, with rather marked physiological cupping. He thought it would be interesting to know whether these patients had normal color vision. As far as he knew this point has never been determined.

DR. SCHWAB thought it was a backward tendency on the part of neurologists to call all diseases of this class congenital. He did not think there was sufficient data to group such cases as peroneal muscular atrophies and Friedreich's disease, and diplegia together. He thought there ought to be some definite basis upon which to build. There ought to be either a pathological or a physiological classification. He considered it a fertile field for investigation to find the etiological factor.

DR. HOGE said it would be very interesting if it could be demonstrated that there was a direct etiological relation between infectious diseases and the onset of this degenerative process. He had remarked in exhibiting the patient that the onset of the disease had been observed to follow acute infectious disease or injury. At the same time the occurrence of the disease in numerous members of the same family through several generations, and the fact that it is to all appearances inherited, would indicate that there is in such cases an hereditary deficiency either in development or in the resistance of the nervous tissues.

The idea of the relationship of such diverse conditions as heredi-

tary chorea and peroneal atrophy is in accordance with the neuron theory. The cerebral affections represent a degeneration at one end of the chain of neurons, and such a condition as muscular atrophy represents a disease at the other extreme, while various other conditions represent degenerations at intermediate points. The hereditary feature of the disease is not sufficient in itself to justify us in classing them under one head. Yet they have certain other characteristics in common. They have similar pathological changes, namely, a degeneration of the neuron substance proper, followed by an increase in neuroglia and connective tissue, they are apparently due to a congenital defect, they usually develop early in life, and not infrequently the symptoms and changes of two or more of the above conditions are present in the same case; so that not without reason they have by some been included in one class, as a family of diseases, as well as familial diseases.

There was one feature of the case before the Society which he had hoped would be discussed, but which was not touched upon; that was the explanation of the sensory disturbances. He was not fully prepared to explain their significance. Two possible explanations had occurred to him—one was that we have the co existence of syringomyelia, or of central gliosis, which has been observed in connection with this disease. The sensory disturbances are rather more widely distributed and symmetrical than is usually found in this condition. The more probable explanation is that it is due to a degeneration involving the sensory tracts of the cord.

DR. W. S. BARKER read a paper (see page 437 of this number) entitled

**Use of Diphtheria Antitoxin Prepared by the City of
St. Louis.**

DISCUSSION.

DR. AMAND RAVOLD said that every effort was made in the Health Department to have the antitoxin of the best quality, though as yet they had not been able to turn out a grade as high as 400 or

500 units. The Department has not had the horses to do this, as it takes a horse that will stand a great deal of punishment, and many of them are killed, so the effort has been to maintain the grade at 100 to 200 units.

He urged that the physicians use the remedy, and use it early in the disease. He read some extracts from the report of his department for the past year showing that the mortality in diphtheria had been cut almost in half. Since the beginning of the year something of the history of every case of diphtheria was obtained, and where antitoxin was not used, an effort was made to find out why it was not used; various reasons were given for not using the remedy. He believed the death rate could be materially lowered for diphtheria if all physicians would use antitoxin.

DR. R. B. H. GRADWOHL thought there ought to be no hesitation on the part of physicians to use this remedy in diphtheria. The evidence in its favor was too overwhelming to admit of any doubt as to its efficacy. Wherever used the statistics showed a great decrease in the death rate. The clinical picture of diphtheria is well marked and there is no difficulty in making a diagnosis, as is the case in some of the other infectious diseases. The use of the Health Department culture tubes also makes the diagnosis certain, and can be obtained within 24 hours. When the case is well marked it is the duty of the physician to give antitoxin at once, without waiting for the report on the culture even. In this connection he said the importance of a correct bacteriological diagnosis was not fully appreciated. Many cases supposed to be streptococcus infection were really staphylococcus, or a mixture, and the use of the serum in these cases did not, of course, give good results.

DR. GIVEN CAMPBELL said he now saw a great many cases of post-diphtheritic paralysis, and the idea was prevalent that the antitoxin was responsible for this. The reason for it was, and he tried to explain it, that the antitoxin cured the diphtheria but did not prevent the paralysis following; that before the use of antitoxin the patients died, but now they recovered from the attacks but not from some of the sequelæ.

DR. GREEN thought antitoxin should be administered at once in

critical cases without waiting for the report of a bacteriological examination. As far as he knew, the injection of even a curative dose had not been followed by untoward results, even when the subsequent bacteriological examination failed to disclose the specific micro-organism.

DR. CHAS. SHATTINGER had used the city antitoxin rather freely and with uniformly good results—fully equal to the results obtained with other antitoxins. He usually administered 3000 units without reference to the age of the patient, unless he thought the case unusually mild. In no instance had he any reason to attribute a bad result to the antitoxin itself. In one case there developed some symptoms after the antitoxin had been used which he was at a loss to explain. After the diphtheria was evidently cured—clinically cured, though he could not say that the bacillus had disappeared from the throat, because no secondary culture had been made at the time—the child suddenly developed a rising temperature, reaching in six hours 39.5°C . and had pains in the lower limbs, with inability to walk. He tested the condition in the limbs very carefully and was satisfied there was no paralysis, but that the inability to walk was due to the pain caused in the effort; the child was perfectly able to move the legs but refrained from doing so on account of the pain. This continued for about 12 hours, keeping the child awake during the greater part of the night. The pain then grew less and disappeared entirely in about 36 or 48 hours. He did not think it was a neuritis and knew it was not paralytic in nature.

DR. CAMPBELL thought the condition mentioned by Dr. Shattinger might be analogous to an attack of nettlerash, sometimes seen, and a swelling of the joints. It was a question of the pocket-book saving the skin from nettlerash. He noticed that when a less amount of the toxin was used there was less liability to the rash and swelling of the joints.

DR. SHATTINGER said he neglected to mention that there was no swelling of the joints or other manifestations except the heat and pain, and the condition subsided without treatment of any kind which would influence it.

DR. BARKER was inclined to agree with Dr. Campbell in regard to the case mentioned by Dr. Shattinger and thought it was a post-diph-

theritic condition allied to the urticaria, not so very uncommon in these cases. He had seen several cases that tallied closely with that described by Dr. Shattinger, most of them presenting some manifestations, however slight, of urticaria, but there were two cases having only pain in the limbs as the solitary post-diphtheritic abnormality, such pain lasting a day or two. Speaking of the delay in using the City Health Department antitoxin, he had arranged so as to guard against this. He usually kept a bottle or two on hand and when a case turned up he was ready to use it immediately. He attributed the very large percentage of the recoveries reported to the fact that he used efficient antitoxin, and that without delay. He had never any serious complications from the use of the antitoxin; at one time he thought an edema of the glottis was coming on, but it did not amount to much. He had not made any extensive examination of the urine after using the antitoxin, but in the few cases examined there was found a slight amount of albumin which, however, was very often present in the disease when antitoxin was not used. Stenosis did not occur when the antitoxin was used early in the disease. In those cases where he found it necessary to intubate, or to perform tracheotomy, all but one were cases where there had been delay in the use of antitoxin. He mentioned for record some statistics for the past seven or eight years, in which 23 cases were intubated, with 6 deaths, or 74 per cent of recoveries.

DR. RAVOLD asked if these were cases where antitoxin was used.

DR. BARKER said antitoxin was not used in these six cases except in the latter course of the disease. It was so used in all of them after intubation was done. The presentation of the paper is not intended so much as a contribution upon the use of antitoxin as a tribute to the health authorities for giving us an opportunity to treat diphtheria in this way. Much of the work of the writer is among a class of people, a great many of whom are unable to purchase antitoxin in large enough quantities for a thorough treatment as described. He had used other brands to some extent, but the great majority of the cases were treated with the city product. He desired the efficiency of this product to become better known, also the fact that it could be obtained free. He had seen a number of cases of marked post-diphtheritic

paralysis and thought these cases nearly all occur only when the use of the antitoxin is delayed or when it is given in insufficient quantities.

DR. REDER asked if any case had been found in which the administration of the antitoxin did not seem to bring improvement, and was followed by intubation, and with what result.

DR. BARKER had seen such cases; many of the 23 cases failed to show prompt improvement after giving antitoxin and required operative interference, but not one died where the giving of antitoxin antedated the operation of intubation, even as much as one hour; it is among the cases of delayed injection, or the use of small amounts of antitoxin that the deaths occur.

DR. RAVOLD said the troubles which seemed to follow the use of antitoxin was probably due to the temper of the horse. The antitoxin used in these cases was from the blood of the same horse. There was one black horse who was very fractious and would get excited whenever he was bled, and try in every way to prevent it. When the serum from this animal was used there was always bad results, such as urticaria and pain, etc. For this reason they had excluded all horses that were at all fractious, and now only use perfectly docile and gentle animals.

ST. LOUIS OBSTETRICAL AND GYNECOLOGICAL SOCIETY.

*Meeting of January 18, 1900; Dr. Armand Derivaux,
President, in the Chair.*

DR. WALTER B. DORSETT reported a case of

Vaginal Hysterectomy for Inflammatory Trouble.

Mrs. P., 30 years of age, married the first time quite young, and after about one year gave birth to a healthy child; puerperium normal. One year later she contracted from her husband what was pronounced by her physician an attack of gonorrhea. This soon resulted in tubal complications and probably a pelvic peritonitis, which came near caus-

ing her death. Shortly after this she secured a divorce from her husband, and about a year later she remarried and for about two years enjoyed comparatively good health. The loss of a lucrative position by her husband necessitated her accepting a position as cashier in a hotel; this position required her to be on her feet the greater portion of the day, which soon relighted the former trouble and she again became an invalid. After considerable suffering she consulted a surgeon of this city, who dilated, curetted and packed the uterus: this gave temporary relief, but she soon became worse, and he then opened the posterior vaginal vault and drained away a considerable amount of foul pus.

When she consulted me for the relief of a very offensive discharge, the stench from which was almost unbearable both to herself and the household generally; it was so intense that before examining her I suspected cancer.

On examining her the uterus and roof of the vagina was an immovable mass, as ascertained by vaginal touch; this indurated condition extended upward to a transverse line that could be drawn between the anterior superior spinous processes of the ilium; dullness on percussion could alone be detected; a small fistulous opening could be seen posterior to the uterine neck and a little to the left side; a flexible probe was passed into this opening and penetrated to the depth of four and a quarter inches. The patient was very anemic, and was troubled with night sweats; in short, she was in an extremely septic condition.

After sending her to the hospital it was decided to open and evacuate the abscess sac through the vagina, for the reason that the major portion of the induration was low in the pelvis and it was feared that it would be hard to reach the mass and clean out the pelvis from above.

The patient was fortified with frequent doses of strychnia for two days, and after being anesthetized with chloroform, was placed in an exaggerated lithotomy position.

Douglas' sac was opened freely and three fingers were introduced and large abscess cavities were broken up with the evacuation of large quantities of very offensive pus.

The examining finger now ascertained that one of these cavities extended to the left and anteriorly, completely surrounding the uterus to a point corresponding to the utero-vesical fold.

So completely did these pus caverns surround the uterus that the bladder attachment was the only healthy attachment present. It was therefore decided to remove the uterus, which was easily done. The patient made an uneventful recovery and was out of bed and left for her home at the beginning of the fourth week after the operation. This patient was seen about a week ago, she is perfectly well and has gained 15 pounds.

The question to my mind is whether it is not better to remove the uterus, per vaginam than by the suprapubic route, when the inflammation is low down in the pelvis; and whether the uterus should not also be removed for inflammatory troubles.

DR. E. J. NEVILLE asked if it was advisable to remove the uterus through the vagina in cases of pyosalpinx. While this case has been comparatively easy, had there been extensive adhesions the operation might have been of a disastrous nature.

DR. F. J. LUTZ said that there was no question as to the propriety of doing what was done in this case, but that the method of procedure must depend upon the conditions as we find them. In this instance the uterus was detached, dissected out and its attachments, except that to the bladder, removed by an abscess which probably came, primarily, from the tube, so that no other method of procedure was as advantageous. Had this cavity been thoroughly cleansed and the tubes pulled down and removed, a large suppurating cavity would have been left, which in the woman's highly septic condition would have resulted in her death. Whether other inflammatory conditions, such as are here presented, occurring in the uterus, warrant its removal, is an unsettled question. If the uterus is to be removed for metritis, so-called, a wide field will be opened up and uteri will be removed which are simply inflamed and which would resume their physiological functions after the infection had been removed and after the products of the inflammation have been evacuated. Ordinarily the metritic inflammation subsides after curettage and proper drainage. If, however, the inflammation extends beyond the uterus, he did not feel that

the uterus should be taken out simply because the tubes and ovaries had been removed.

DR. DORSETT had been unable to ascertain the extent of the previous incision, of which only a fistulous opening, the size of a lead-pencil, remained, and which was discharging pus as it had been since the previous operation. He thought the route to take depended upon the location of the abscess, and when situated high up, it is best reached by means of the abdominal rather than through the vaginal route. The questions he had tried to bring out in his paper were: When and under what conditions should vaginal hysterectomy be performed in inflammatory troubles. The possibility of adhesions between the intestines in going from below upward, is, in a measure, abviated when operating from above with the patient in the Trendelenburg positon. He thought that the amount of cicatricial contraction following inflammatory conditions in this locality rather prevented the tendency to hernia in the vaginal operation, on which grounds an objection might be made, even though the uterus was removed. In the large majority of cases of gonorrheal infection of the tubes and ovaries, the tubes are permanently destroyed and should be removed, preferably by an abdominal operation, leaving the uterus behind; but where there is a chronic accumulation of pus which can be outlined, and pointing, as it often does, into the vagina, vaginal section is very applicable, especially in the acute pus collections that follow abortions. A large number of acute and chronic accumulations of pus following abortion and the puerperal state can be evacuated and a radical cure result; in gonorrheal infection the results are not so favorable.

DR. J. Y. BROWN had only recently come to an appreciation of the vaginal route in dealing with pus accumulations in the pelvis. He thought that while a large majority of these cases can be better treated by the abdominal route, the vaginal method undoubtedly had a field. He indorsed the method used in this case and said that a large amount of prejudice which prevails against this method of dealing with abscess accumulations was due, to a considerable extent, to the defective carrying out of the technique of the operation. Vaginal section affords a means by which to thoroughly examine the tubes and ovaries, and of removing large accumulations of pus which, when not

gonorrheal in character, can be cured by making a large vaginal opening, posteriorly, and packing the cavity with gauze; if a cure does not result, an abdominal section can be made later; in such cases a small vaginal puncture will not suffice. He mentioned an instance in which, following an attack of gonorrheal salpyngitis, an abdominal tumor was found extending from the pelvis to near the umbilicus; a trocar inserted into the cul-de-sac of Douglas revealed pus, which was evacuated by vaginal section. He was of the opinion that this was a combined appendiceal and tubal abscess; he thought that a good per cent of cases of suppurative tubal diseases on the right side had appendiceal complications.

DR. NEVILLE did not believe that the uterus should be included when the tubes are removed, since many are cured by the removal of the tubes alone, even if there have been adhesions and an extension of the inflammation beyond the tubes; many such cases recover.

After the removal of the tubes the patient usually recovers, and sometimes when the inflammation is general, after the focus of inflammation is removed, the pain likewise ceases. His experience was limited in vaginal hysterectomy for inflammatory conditions, but unless other remedies fail, he would not remove the uterus.

Acting Assistant Surgeons in the Army.—A bill is before Congress granting to all Acting Assistant Surgeons of the Army of the United States the same rights and privileges as regards leaves of absence, quarters and commutation, and all other rights, privileges, allowances and emoluments (except pay, which shall be, except as otherwise stipulated, at the rate of \$150 per month) as commissioned officers of the Army of the grade of First Lieutenant, mounted. The bill provides also for back pay, rank, etc., for Acting Assistant Surgeons who served during the Spanish war and who were dropped for illness or disability, and also enacts that those who have served for one year or more shall be commissioned Assistant Surgeons of Volunteers with the rank of First Lieutenant, mounted, subject to honorable discharge when their services are no longer needed.

REPORTS ON PROGRESS.

MEDICINE AND THERAPEUTICS.

Chronic Hydrocephalus.

Grober (*Münch. Med. Wochenschrift*, No. 8, 1900) reports two cases of chronic hydrocephalus treated in Stintzing's clinic by means of lumbar puncture. The first case, in which twenty-five punctures were made, resulted in complete recovery; the second, which was punctured twelve times, showed a permanent though slight improvement. Heretofore there has been a pretty general consensus of opinion among clinicians that any improvement following lumbar puncture in the chronic hydrocephalus of children was but fugitive.

Cyclic Albuminuria.

Rudolph (*Centralblatt f. Inter. Med.*, No. 9, 1900) confirms Stirling's discovery that in patients with cyclic albuminuria the albumin appears in the urine only when the patient is in the erect posture. Twenty minutes after being carefully taken out of bed and standing on her feet a girl suffering with this disease, her urine gave a positive reaction for albumin. Half an hour after the patient had been returned to the prone posture the albumin had again disappeared from the urine. Rudolph believes the albuminuria in this disease to be due to a passive renal congestion, the cause of which is not known. He advises against confining the children to their beds, as even after months of absolute rest in bed the albuminuria promptly reappears on arising. He believes that a long residence in a southern climate promises the best results, and has himself seen a cure effected by this means of two cases.

Ulceration of the Esophagus Mistaken for Cancerous Growths.

A. Fraenkel (*Wiener Med. Wochenschrift*, No. 42, 1899) describes

two cases of ulceration of the esophagus that, during life, were mistaken for cancerous growths, but which the autopsy revealed a round peptic ulcers of the esophagus. In one case the ulcer was fresh, in the other it had healed with the formation of a stenotic scar. Fraenkel explains this rather unusual observation by recalling Schaffner's observation, that in the normal esophageal mucous membrane small, sharply-defined islands are occasionally found, covered, not with pavement but with cylindrical epithelium, and containing glands closely resembling those of gastric mucosa.

Two Kinds of Erythema Occurring in Typhoid Fever.

Remlinger (*Rev. de Med.*, No. 2, 1900; *Berliner Klin. Woch.*, No. 14, 1900) describes two kinds of erythema occurring in the course of typhoid fever. The one simulating that of scarlatina is of unfavorable prognostic significance, but rather rare; it appears either during the height of the fever or a day or two before death; occasionally during convalescence. A more frequent form resembles the eruption of measles. When occurring during the height of the disease it is accompanied by a rise of temperature and other signs of secondary infection. Its prognosis in such cases is somewhat unfavorable but less so than the scarlatinoid form. When occurring during convalescence its prognosis is favorable.

Old Books as a Disseminator of Tuberculosis.

The spread of tubercular infection by means of the dust in old books has been demonstrated (*Berl. klin. Wochenschr.*) in Russia. A number of clerks in one of the departments of the Russian government acquired phthisis, one after the other. After a long search, tubercle bacilli were found in certain books much used in the department. A former clerk who had been in the habit of moistening his thumb with saliva when turning over the leaves of books had been a consumptive, and is considered to have been the source of the infection of the books.

It is undeniable that this may represent a source of danger in our public libraries, as many readers have the habit above referred to of moistening the thumb when turning over the leaves of a book.

TAUSSIG.

NEUROLOGY.

Landry's Paralysis—Remarks of Classification.

E. W. Taylor and J. E. Clark (*Journal of Nervous and Mental Diseases*, April, 1900) offer a critical analysis of the claims of this affection to be recognized as an independent disease. They report a case following the course to a fatal issue, ordinarily described as Landry's paralysis and gives the macroscopic and microscopic findings at autopsy.

A summary of the findings gives as positive result the presence of numerous hyaline bodies (amyloid) in the central nervous system, a focus of tuberculous meningitis in the thoracic cord, and changes of a pigmentary character in numerous ventral horn cells, studied particularly in the cervical region. The investigation is negative as regards the discovery of degeneration in the peripheral nerves, or positive evidence of the presence of bacteria as an exciting cause.

The authors mention the critical analysis of the subject by Diller and Meyer, Bailey and Ewing, Mills and Spiller, and Thomas, and add that opinions differ fundamentally as to the exact or even approximate nature of the of the disease, and whether, in fact, it is after all to be regarded as an independent disease process or not. When such a diversity of opinion prevails at the end of a long period of conscientious study we may assume that we have not arrive at a fundamental conception of the process which lies at the root of the clinical symptoms. Numerous observations by others are quoted to show that there is no uniformity in the post-mortem findings in this disease: in some there are no changes at all discoverable in others profound changes of a very diverse character.

The authors conclude that inasmuch as there is no essential constancy in the clinical symptoms, nor in the pathological findings of so-called Landry's paralysis, and inasmuch as the etiology is wholly vagues, it is probable that the affection does not represent in itself a process to which the term disease may properly be applied and that, therefore, it is desirable to drop the term as unnecessary and misleading.

BLISS.

OPHTHALMOLOGY.

Albuminuric Retinitis.

Samuel West, of London (*British Medical Journal*, October 28, 1899) says: Albuminuric retinitis in its typical form is characteristic and pathognomonic. Yet upon many important points the statements of authorities are very conflicting and difficult to reconcile. Kidney diseases fall into two great groups according as dropsy is a prominent symptom or not; and the kind of albuminuric retinitis most frequently met with in these two groups will, I think, be found to be different. The lesions of albuminuric retinitis consist of white patches, hemorrhages, and exudation, variously combined with each other, and lastly, quasi-inflammatory conditions.

THE EXUDATIVE (EXTREME INFLAMMATORY) FORM.—In this form the changes are widespread and extreme, and closely resemble what is seen in other forms of acute neuro-retinitis. This form rarely occurs in granular kidney where dropsy is not very common, but is frequently met with in parenchymatous nephritis. Complicated as this question is, we seem to be justified in drawing these conclusions: That this form of albuminuric retinitis is of an exudative, inflammatory type, that it is probably of toxic origin and related rather to the cellular degeneration than to the interstitial fibrosis. If the view I am expressing proves to be correct, it follows not only that the kind of albuminuric retinitis which prevails in the two forms of renal disease is different, but that it has a different diagnostic value in the two cases. In parenchymatous nephritis the diagnosis is obvious and the albuminuric retinitis is an interesting by-phenomenon only. In granular kidney the diagnosis may be uncertain until all doubt is dispelled by the discovery of the characteristic eye changes. It is to this group that some of the cases of albuminuric retinitis of pregnancy belong. On the other hand, many more of these cases in pregnancy belong to the degenerative group and are evidence of granular kidney. Puerperal eclampsia occurs in either form; in the former rarely without dropsy, and in the latter not infrequently without.

THE DEGENERATIVE FORM.—This form consists of white patches

and hemorrhages. Of these, the most characteristic are the white patches. There are, I believe, two kinds of white spots—the one forming bright spots glistening like scales, the other not so glistening or so sharply defined but woolly in appearance. The former are the result of degenerative changes and their brilliancy is due to the presence of minutely refractive oil drops or even cholesterine crystals; the latter are often small patches of exudation only. The former are of slow development and unlikely to disappear at all or only slowly and after a long time; the latter, however, may come and go rapidly. In parenchymatous nephritis the diagnosis of renal disease is usually obvious, whether there are white spots or not. In granular kidney, however, the diagnosis may be uncertain until the eye changes are discovered. The white spots, whether they be really exudative or degenerative have, therefore, in granular kidney a diagnostic value, which they do not possess in the other forms of nephritis. Early as the white patches or degenerative changes are, they are preceded by, and result from still earlier changes in the vessels. Although the silver-wire arteries are no doubt ophthalmoscopic evidence of the vascular degeneration, as are also the hemorrhages and white spots, it does not follow that the vessel necessarily shows the white silver-wire streaks before the other lesions are visible. Of the hemorrhages which occur in albuminuric retinitis, it is not necessary to say much. Similar hemorrhages may occur in both the exudative and in the degenerative forms, but they are probably produced in different ways in each case. In the latter they are the consequence of the vascular degeneration, and are due to rupture of the diseased arteries in the retina, as in other parts of the body. In the former they are generally due to the rupture of over-distended veins, consequent on the pinching to which the veins are subjected as they pass through the swollen disc.

Paradoxical as it may seem, it is the so called extreme forms of albuminuric retinitis, or, as I should call them, the exudative forms, that the prognosis both in respect to life and in respect to sight, is not nearly so grave as it might appear to be; for if the kidney mischief recover, the eye lesions may resolve and the sight be completely restored. If, as in pregnancy, the cause returns, the retinitis may also return, and with each successive pregnancy the prognosis, in respect to sight, of

course, becomes worse. In respect to life, the prognosis is that of the renal disease, and all that I think the presence of albuminuric retinitis in these cases does, is to show that we have a form of parenchymatous nephritis to deal with of a somewhat unusual severity. The white patches of granular kidney rarely disappear, but they are often present without much defect of sight. The ophthalmoscopic changes in the vessels are important as evidence of an arterial degeneration which is not limited to the eye, and it is a visual evidence of the risks to which the patients are subject from the disease of the vessels elsewhere, for example, in the brain.

I may bring this communication to a close by summing up the facts which I think justify the drawing of a sharp distinction between the two forms of albuminuric retinitis—the degenerative and the exudative. They stand in strong contrast with each other in the following respects :

1. Of the forms of the disease with which they are usually associated; the degenerative with granular kidney; the exudative, especially with parenchymatous nephritis.
2. Of their nature and cause, the exudative being inflammatory and probably toxic in origin; the degenerative consequent on vascular changes, and more or less mechanical in origin.
3. Of sight; for the exudative, even in the extreme forms, may occur with little or no defect of sight; but with the degenerative, if there is any impairment of sight, it is usually progressive.
4. Of diagnostic value; the exudative being an interesting by-phenomenon of chronic parenchymatous nephritis, an affection the existence of which is obvious enough, while in granular kidney the degeneration often makes the diagnosis certain in cases which have hitherto been obscure.
5. Of risk to life; while in both cases it indicates a grave form of renal disease which may of itself prove fatal, in granular kidney it indicates, in addition, all those dangers to which arterial disease exposes the patient. I think, therefore, that the distinction is not only justified by the facts but explains many of the apparent contradictions which are made by different authors.

Relative Frequency of Iritis in Syphilis and Rheumatism Observed in Three Thousand Cases.

Randolph Brunson (*Ophthalmic Record*, November, 1899) gives the results of examinations in three thousand cases of syphilis and rheumatism, fifteen hundred cases of each, to determine the relative frequency of iritis in these two affections. In the fifteen hundred cases of syphilis, iritis occurred forty-eight times, or in 32 per cent. of the cases; while in the fifteen hundred cases of rheumatism it occurred twenty three times, or in 15 per cent. of the cases. The per cent. in each case, he says, is about double as great as that given by most authors.

SHOEMAKER.

PEDIATRICS.

Myocarditis in Infancy and Childhood.

Koplik (*N. Y. Medical News*, March 31, 1900), with his usual vigor, discusses this subject. Contrary to the usual opinion, myocardial changes are very frequently found post mortem. The direct cause is the toxin of some pathogenic micro-organism. Fever, in itself has little effect on the heart muscle. The most common diseases complicated or followed by myocardial disease are—diphtheria, pneumonia, rheumatism, streptococcic angina or septicemia, and pertussis. In valvular heart disease and in adherent pericardium, changes in the muscles may occur.

The prognosis is by no means fatal. Restoration of the degenerated muscle fibers may occur by regeneration. The diagnosis depends on our knowledge of a toxin circulating in the blood, or in the course of an acute infectious disease, if we have attacks of faintness, pallor, vomiting, disturbed and irregular heart action, a persistent distortion of the respiration and pulse ratio, we must suspect it. ~~Confirmation~~ Confirmation is obtained by examining the heart and finding extreme weakness of the apex beat, or the disappearance of the muscular quality from the first sound, and slight accentuation of the pneumonic second sound.

The areas of degeneration will not be aided by drugs, but must

be healed. Do not overstimulate the healthy fibers; foster their strength rather. The hope of these cases, then, lies in well-sustained nutrition, carefully and persistently regulated.

The Inaccuracies of Home Modification of Cow's Milk.

Woodruff (*Philadelphia Medical Journal*, March 31, 1900) finds extreme difficulty in modifying milk accurately at home, in accordance with modern formula. For the feeding of infants a dilution of cream with the addition of sugar is the most simple method. But creams vary so much in their strength, consequently, the baby has a varying diet, but the author believes this has no evil consequence. The author publishes some charts which by curves show the percentages of the various ingredients at the increasing age of the infant.

The following table may be accepted as a fair average of the cream obtained from the upper ounces of a "deep set," 4 per cent. milk, supposing that the skimmed milk left in the bottle has about 0.75 per cent. fat:

Per cent. of Fat in Cream.	Upper ounces of Milk.
4	3 ²
4 ¹ / ₂	24
5	20
6	18
7	15
8	13
9	10
10	10
11	9
12	8 ¹ / ₂
13	8
13	7 ¹ / ₂

By this table any percentage of cream may be obtained sufficiently accurate for practical purposes. The only objection to setting the cream at home is the fact that the milk may be 48 hours old before it reaches the consumer, and that any further keeping gives more opportunity for bacterial growth.

The Significance of Earache in Children.

T. H. Halsted (*N. Y. Medical News*, March 17, 1900) presumes that the ear has been more deliberately neglected by the average physician than any other organ. Earache is of two varieties—the one is otalgia, the other is the pain that accompanies inflammation. The neuralgic earache is usually caused by some disease external to the ear itself; the pain may be constant, but is usually intermittent. The most common cause is decayed teeth, tumors, etc.; but in children neuralgic earache is the exception; pain in the ear with them means inflammation.

On account of the shortness of the Eustachian tube the inflammatory exudate in the middle may readily pass into the naso-pharynx, and thus cause little pain. Then infants can not indicate the location of the pain; but the little sufferer will bore its head in the pillow and put its fist to the side of its head. Inflammation of the middle-ear is so commonly overlooked, and yet in infancy and childhood it is so very frequent; this is due to the presence of adenoids, shortness of the tube and the exanthemata.

The author cites the results of Ponfick and Barth, who found that 90 per cent. of children on whom post-mortem examinations were made presented evidences of a recent inflammation of the middle-ear. The author quotes Hartman, who "regarded the gastro-enteritis as the result of resorption of the toxic poisons from the exudate in the tympanic cavity."

The writer examined 44 ears of children in the hospital and found only 20 ears normal. Recurrent attacks of earache means the presence of adenoids. The sclerosis of the middle-ear in adults is usually the result of repeated attacks of inflammation due to adenoids in childhood.

A Case of Mitral Regurgitation and Pulmonary Obstruction.

This rare combination of cardiac lesions is exemplified by a case reported by Eshner (*Pediatrics*, April 1, 1900). The patient was a girl, 8 years of age, who gave a history of "nervousness," heavy breathing during sleep and a dry cough. Examination revealed an enlarged heart and a loud systolic murmur at the apex; at the left base

a rough systolic murmur was audible. No certain history of congenital heart disease could be elicited.

ZAHORSKY.

SURGERY.

The Cardinal Pathognomonic Sign of Fracture of the Lower End of the Radius.

Martin W. Ware (*N. Y. Medical Record*, March 31, 1900), in a well-written paper, quotes several authorities and draws upon his own experience with three hundred cases to prove that the silver-fork deformity is frequently not present in a Colles' fracture. It never fails, however, that the radial styloid process rises to the level of the ulnar or even higher.

The Radical Treatment of Umbilical Hernia.

E. Piccoli (*Centralblatt fuer Chirurgie*, No. 2, 1900) extirpates the sack in the usual manner and then unites the recti in a way which causes the one to pass partly under the other, thus insuring a double layer of muscle for the weakest part of the abdominal wall. A thread is passed through the edge of the rectus, knotted, the strands separated and each of the two passed separately under the opposite rectus and through its body, afterward they are tied on front of the muscle. The skin is sewed separately.

Operation for Perforated Typhoid Ulcer Eighteen Hours After Perforation.

W. E. Lower (*Cleveland Medical Gazette*, April, 1900), reports a case in which the perforation was fourteen inches from the valve. The abdomen contained a large quantity of fecal matter, and though the operation lasted but twenty minutes, the patient died sixty hours later of sepsis.

Remarks Upon Ovarian Tumor With Twisted Pedicle.

M. H. Richardson (*Virginia Medical Semi-Monthly*, January 12, 1900) reports eight such cases in which the course was mild, the tumor in each case acting merely like a foreign body and not as a cause of

sepsis. The author makes the diagnosis when a tumor which has long lain dormant in the abdomen suddenly increases in size and becomes a highly irritating body producing the most pronounced constitutional symptoms. Only one of Richardson's patients died as a result of the operation.

The Closure of Abdominal Wounds by Buried Silver Wire Net.

Prof. O. Witzel (*Centralblatt fuer Chirurgie*, March 10, 1900) draws the umbilicus sharply upward on a hook in order to be sure to strike the linea alba, as it is thus made prominent, in an incision between the umbilicus and the pubis. He makes interrupted silver sutures through the rectus edges and a continuous suture with the same material in the anterior sheath of that muscle. The skin is united separately with silver. As a preventive or curative measure against umbilical, inguinal, and femoral hernia, the author advises that a piece of silver wire net be incorporated within the tissues.

The Surgical Use of Celluloid Thread.

W. W. Keen (*Philadelphia Medical Journal*, March 10, 1900) speaks very highly of this new suture material. It is capable of every means of sterilization and most of them increase its tensile strength. It absorbs fluid to about 41 per cent, and is cheaper than either silk or catgut. Limited use in actual surgical work has convinced the author of its usefulness.

The Topical Treatment of Tumor Albus.

Prof. Lucas-Championniere (*Journal de Medicine et de Chirurgie*, February 25, 1900) maintains that the only rational treatment for this affection is complete excision of the affected joint. The dangers of the operation, when properly performed, have been overestimated. Where this can not be attempted, as in the very young, great pain has resulted from the combined application of ignipuncture and plaster-of-Paris, this is going on the theory that tuberculosis in general is a curable affection. As the secondary pain in many of these cases is worse than the primary pain of the puncture, a general anesthetic is to be preferred in most instances to one of local nature.

INDEX TO VOLUME XXII.

January==June, 1900.

Original Communications.

Abortion; or, expulsion of the unviable fetus—Chas O. Molz, M.D., - -	350
Anastomosis of the ureters with the intestines—Reuben Peterson, M.D., -	338
Aneurysm; with report of several cases—Louis H. Behrens, M.D., - - -	428
Antisepsis, The relative value of, and of improvement in technique, as regards the actual results in operative gynecology—L. Gustave Richelot, M.D., 4, 112, 181	
Appendectomy and oophorectomy, An unique coincidence in atdominal surgery in the same patient; perfect recovery within five weeks—Henry H. Summa, M.D., - - - -	434
Atrophy, Peroneal muscular — Given Campbell, M.D., - - - -	343
Climate of Tucson, Arizona—A. W. Olcott, M.D., - - - -	103
Consumptives, Sanatoria for—Beverley Robinson, M.D., - - - -	1
Diphtheria antitoxin, Report of the use of, prepared by the city of St. Louis—Wm. Shirmer Barker, M.D., - -	437
Diseases of the air passages, Cold as an etiological factor in—John Zahorsky, M.D., - - - -	401
Eclampsia, The so-called fetal theory of the cause of—P. C. T. Von der Hoeven, M.D., - - - -	254
Ectopic gestation—Fgbert H. Grandin M.D., - - - -	161
Hemorrhage, Secondary post-partum, A case of—L. E. Newman, M.D., - -	166

Inebriety, Psychological etiology of—T. O. Crothers, M.D., - - - -	439
Insanities, Post-febrile, relating particularly to la grippe and typhoid fever—J. K. Bauduy, M.D., - - - -	241
Lactoserum, Studies on, and other cel'sera—C. Fisch, M.D., - - - -	90
Leprosy; A clinical lecture — Isadore Dyer, M.D., - - - -	331
Living, The philosophy of — Isadore Dyer, M.D., - - - -	191
Malignant disease, The increasing frequency of—Joseph Bryant, M.D., -	81
Paralyses of children, Mechanical and surgical problems in the—Virgil P. Gibney, M.D., - - - -	321
Placenta previa, Report of a case of—Frank Hinchey, M.D., - - - -	176
Polypi, Removal of one hurdred and seven, at one sitting—H. W. Loeb, M.D., - - - -	32
Report of results of eighteen tests made for rendering the hands aseptic before operation—N. B. Carson, M.D., -	25
Retina, Torpor of the due to exposure in the Klondike—J. Ellis Jennings, M.D.	22
Scarlatina, A preliminary report on the etiology of—R. B. H. G adwohl, M.D.,	269
Stricture of the ureter a possible result of the laceration of the cervix uteri, and ureterovaginal fistula a result of trachelorrhaphy—E. C. Dudley, M.D., -	262
Surgical cases, Rare and interesting—C. P. Thomas, M.D., - - - -	171

Typhoid fever complicated with chorea
and diabetes insipidus — Carl Orth,
M.D., - - - - - 21

Uric acid diathesis, Treatment of the
"clinical types" of the—I. N. Danforth,
M.D., - - - - - 418

Editorials.

Adulteration of food products, - - - 123

Alum, The use of, in food, - - - 207

Bubonic plague, The, - - - - 451

Cancer, The increasing frequency of, - 368

Consumptive poor, The State care of the 121

Contributors, Our - - - - - 125

Disease, Foreign dirt and, - - - 446

Food products, Adulteration of - - - 123

Food, The use of alum in - - - 207

Gonococcus, The influence of the envi-
ronment upon, - - - - - 366

Hospital, City, the St. Louis - - - 204

Laboratory work by physicians, The
need of, - - - - - 448

Medical association of Missouri, - - - 371

Medical expert witness, The - - - 35

Medical practice bills and the State Board
of Health, - - - - - 37, 273

Medical school of the future, - - - 444

Midwives, The examination and licensing
of, by the State Board of Health of
Missouri, - - - - - 275

Mulhall, Doctor Joseph Charles - - - 40

Osteopaths, The defeat of the, in Ken-
tucky, - - - - - 210

Patent medicine advertisement, The, and
the censored newspaper, - - - 209

Plague, The bubonic, - - - - 451

Schenk, Dr., The passing of - - - 39

State Board of Health, The, and medical
practice bills, - - - - - 37, 273

State Board of Health of Missouri, The
examination and licensing of midwives
by the - - - - - 275

State care, The, of the consumptive poor, 121

Surgery of the stomach, - - - - 449

Water supply, Filtration of the, for the
City of St. Louis, - - - - 276

Foreign Correspondence.

Cancer of the uterus, and pregnancy, - 52

Fibromyomata and pregnancy, - - - 44

Obstetrics and gynecology in the Nether-
lands, - - - - - 44

Ovarian cysts, with pregnancy, labor, and
puerperium, - - - - - 48

Pregnancy, and cancer of the uterus, - 52

Pregnancy and fibromyomata, - - - 44

Retroflexion, The treatment of, of the
uterus, in the Netherlands, - - - 127

Uterus, Cancer of the, and pregnancy, - 52

Uterus, Retroflexion of the, the treatment
of, in the Netherlands, - - - 127

Society Proceedings.

Abdominal myomectomy for multiple
fibroids of the uterus, - - - - 389

Abdominal tumor, An - - - - - 130

Abnormally developed kidney, - - - 137

Abortion; or expulsion of the unviable
fetus, - - - - - 393

Abscess, Peritonsillar and post-pharyn-
geal, a fatal case of - - - - 216

Acute arsenical poisoning, - - - - 138

Aneurysm of the subclavian artery, - 216

Aneurysm, Subclavian — aneurysm in
general - - - - - 382

Antistreptococcic serum, Puerperal septi-
cemia treated with - - - - - 136

Antitoxin, I iphtheria, Use of, prepared
by the city of St. Louis, - - - 461

Appendicitis, A case of - - - - 212

Appendix, An, containing an enterolith, 285

Artery, Subclavian, aneurysm of the - 216

Ataxia, Friedreich's, - - - - - 454

Atrophy, Peroneal muscular, presentation
of patient, - - - - - 377

Bladder, Complete exstrophy of the - 131

Carcinoma of the tongue, extirpation for, 387

Climate of Tucson, - - - - - 141

Cyst of the free margin of the vocal cord, 384

Diagnosis, Physical, true interpretation of certain sounds in, - - - -	374
Diphtheria antitoxin, Use of, prepared by the city of St. Louis, - - -	461
Enterolith, An appendix containing an	285
Exstrophy, Development of the fetal bladder and conditions leading to -	287
Exstrophy of the Bladder, Complete -	131
Extirpation of the tongue for carcinoma,	387
Fetal bladder, Development of the, and conditions leading to exstrophy, -	287
Fetus, expulsion of the unviable, -	393
Fibroids of the uterus, Multiple, abdominal myomectomy for, - - -	389
Fibromyoma of the uterus, specimen of,	389
Friedreich's ataxia. - - - -	454
Gestation sac, An ovary containing an	285
Hemorrhage, Secondary post-partum, A case of - - - - -	213
Hysterectomy, Vaginal, for inflammatory trouble, - - - - -	455
Inflammatory trouble, Vaginal hysterectomy for, - - - - -	455
Insanities, Post-febrile, relating particularly to la grippe and typhoid fever, -	279
Kidney, Abnormally developed - -	137
Lactoserum and other cell-sera, Studies on - - - - -	139
La grippe and typhoid fever, Post-febrile insanities relating particularly to -	279
Muscular atrophy, Peroneal, presentation of patient, - - - - -	377
Nuclear ophthalmoplegia, chronic, -	372
Ophthalmoplegia, chronic nuclear, -	372
Ovary, An, containing a gestation sac,	285
Peritonsillar and post-pharyngeal abscess, A fatal case of - - - - -	216
Peroneal muscular atrophy, presentation of patient, - - - - -	377
Physical diagnosis, true interpretation of certain sounds in, - - - -	374
Placenta previa, - - - - -	218
Poisoning, Acute arsenical - - -	138
Puerperal septicemia treated with anti-streptococcic serum, - - - -	136

Report of results of eighteen tests made for rendering the hands aseptic before operation, - - - - -	54
Tongue, extirpation of the, for carcinoma,	387
Tumor, Abdominal, An - - - -	130
Scarlatina, A preliminary report on the etiology of - - - - -	290
Scleroderma, A case of - - - -	284
Secondary post-partum hemorrhage, A case of - - - - -	213
Subclavian aneurysm—aneurysm in general, - - - - -	382
Uterus, Multiple fibroids of the, abdominal myomectomy for, - - -	389
Uterus, Specimen of fibromyoma of the,	389
Vaginal hysterectomy for inflammatory trouble, - - - - -	455
Vocal cord, cyst of the free margin of the,	384

Reports on Progress.

Abdominal and pelvic tumors, Pregnancy complicated by - - - - -	67
Abdominal operations, Complete exploration of the peritoneal cavity in - -	64
Abdominal wounds, The closure of by buried silver wire net, - - - -	480
Acute articular rheumatism and chorea, The infectious character of - - -	235
Acute delirious mania, - - - - -	62
Adenitis, Tuberculous - - - - -	69
Albuminuria, Cyclic, - - - - -	470
Albuminuric retinitis, - - - - -	473
Albuminuric retinitis as an element of prognosis in Bright's disease, - -	149
Alcohol narcosis, - - - - -	155
Amblyopia from hemorrhage, - - -	232
Amputation of the penis, - - - -	307
Anemia, The dietetics of - - - -	226
Aneurysm of the aorta in the infant, -	233
Ani, Condylomata - - - - -	145
Anilin stains, Reaction of diabetic blood toward - - - - -	146
Aorta, Aneurysm of the, in the infant, -	233
Appendicitis, An improved operation for, in the acute stage or for quiescent cases with complications, - - - -	308
Appendicitis, A review of the history and literature of - - - - -	237

- Artificial feeding, Experience in - - - 234
 Artificial infant feeding, - - - 234
 Ataxia, Locomotor, a case of, beginning in the sacral cord and presenting unusual sensory symptoms, - - - 295
 Atrophy, Progressive muscular, peroneal types of; report of two cases, - - - 297
 Asepsis, Perfection of, on some interesting points regarding - - - 236
 Bacillus, Typhoid, Cystitis from the - 294
 Bacteria, Cream as the habitat of, in milk, 152
 Bednar's aphthæ; geographic tongue, - 304
 Blindness as a result of tabes dorsalis, - 148
 Blood, The, in gastro-enteritis, - - 305
 Books, Old, As a disseminator of tuberculosis, - - - - - 471
 Bottini operation, How to perform the, on the hypertrophied prostate, - - 74
 Brief summary, A of the indications for operations on the stomach, - - - 152
 Bright's disease, Albuminuric retinitis as an element of prognosis in - - - 149
 Calculi, On the detection of, in the liver and gall-bladder, - - - - 307
 Cancer, Latent, of the stomach, - - - 224
 Cancer of the stomach, A simple palliative operation for, where removal is impossible, - - - - 155
 Cancerous growths, Ulceration of the esophagus mistaken for, - - - 470
 Carcinoma under the age of thirty, - 306
 Cardiac failure, Vomiting and, in diphtheria, - - - - - 303
 Cataract, Senile, the spontaneous disappearance of; report of a case, - - 301
 Celluloid thread, The surgical use of, - 480
 Cerebral diplegia, - - - - - 61
 Childhood, Tuberculosis in - - - 69
 Children, The morbidity of, at various ages, - - - - - 232
 Children, The significance of earache in, 478
 Chorea, Acute articular rheumatism and, The infectious character of - - 235
 Chronic hydrocephalus, - - - - 470
 Chronic stiffness of the vertebral column, 229
 Cocaine, Long-continued use of, follicular conjunctivitis and ecchymosis of the conjunctivæ caused by - - - 147
 Colloid degeneration of the ovaries, - 65
 Condylomata ani, - - - - - 145
 Conjunctivitis, Follicular, and ecchymosis of the conjunctivæ caused by long-continued use of cocaine, - - - 147
 Coma, Diabetic - - - - - 144
 Cow's milk, Gruels as diluents in - - 149
 Cow's milk, The inaccuracies of home modification of, - - - - - 477
 Cream as the habitat of bacteria in milk, 152
 Crepitus, Gall-stone, and friction, - - 236
 Cyclic albuminuria, - - - - - 470
 Cystitis from the typhoid bacillus, - - 294
 Diabetic blood, Reaction of, toward anilin stains, - - - - - 146
 Diabetic coma, - - - - - 144
 Diagnosis, The estimation of the leucocytes of the blood as aid in - - 303
 Diet, Meat, in nephritis, - - - - 144
 Dietetics, The, of anemia, - - - - 226
 Digestive power, The, of the stomach, - 305
 Diphtheria, Vomiting and cardiac failure in - - - - - 303
 Diplegia, Cerebral - - - - - 61
 Double inguinal hernia, Unique case of - 306
 Dyspnea with tubercular meningitis, - 151
 Earache in children, The significance of, 478
 Endocarditis occurring in the course of tonsillitis, - - - - - 145
 Enemata, Nutritive, the value of - - 144
 Epilepsy, Relation of migraine to - - 62
 Epithelioma of the breast, presenting the symptoms of a benign tumor, in a woman 75 years of age, - - - 238
 Erythema, Two kinds of, occurring in typhoid fever, - - - - - 471
 Esophagus, Ulceration of the, mistaken for cancerous growths, - - - 470
 Euphthalmine, The mydiatic action and value of - - - - - 300
 Extirpation of the lachrymal sac and gland, - - - - - 147
 Extirpation, Total, of the stomach, the complete history of a case of - - 73
 Eye, The changes in the, after ligation of the gall-bladder, - - - - 230
 Eyes, The effects of influenza on the - 148
 Feeding, Artificial, Experience in - - 234
 Feeding, Infant, artificial - - - 234
 Fever, Typhoid, Two kinds of erythema occurring in, - - - - - 471

- First-aid, The instruction of railway employees in - - - - - 236
- Fracture of the lower end of the radius, The cardinal pathognomonic sign of, 479
- Fracture, Spinal; Paraplegia, - - - 307
- Friction, Gall-stone crepitus and - - - 236
- Gall-bladder, Calculi in the liver and, on the detection of - - - - - 307
- Gall-bladder, The changes in the eye after ligature of the - - - - - 230
- Gall-stone crepitus and friction, - - - 236
- Ganglion, The formation of a, in the continuity of a tendon, - - - - - 235
- Gastric ulcer, Perforating, a case of; operation; recovery, - - - - - 307
- Gastro-enterostomy, Gastrostomy in addition to - - - - - 74
- Gastro-enteritis, The blood in - - - 305
- Gastrostomy in addition to gastro-Enterostomy, - - - - - 74
- Gastro-enterostomy, The technique of - 154
- Gelatine, Injections of, in hemophilia, - 225
- Genito-urinary organs, Male, the neglect of sexual symptoms in the treatment of the - - - - - 294
- Glaucoma chronicum simplex, A case of, in a girl 13 years of age, evidently induced by the instillation of atropine, - 146
- Gonorrheal rheumatism, - - - - - 294
- Gruels as diluents in cow's milk, - - 149
- Heart disease in childhood and youth, - 304
- Hemorrhage, Amblyopia from - - - 232
- Hemorrhagic diseases of infants, - - 150
- Hemophilia, Gelatine in, injections of - 225
- Hernia, Double inguinal, unique case of 306
- Hernia, The radical treatment of umbilical, - - - - - 479
- Hydrocephalus, Chronic, - - - - - 470
- Hypertrophied prostate, How to perform the Bottini operation on the - - - 74
- Incontinence of urine in children, - - 151
- Infancy and childhood, Myocarditis in, 476
- Infancy, Malarial fever in - - - - - 151
- Infant feeding, Artificial - - - - - 234
- Infant feeding, Laboratory milk in - 150
- Infantile tuberculosis from milk, - - 151
- Infants, Hemorrhagic diseases of - - 150
- Infants, Tuberculosis in - - - - - 305
- Infants, Typhoid fever in - - - - - 150
- Influenza, The effects of, on the eyes, - 148
- Injuries, Traumatic, of the central nervous system, some points in the diagnosis of - - - - - 296
- Insanity, The care of the recent case of - 227
- Insanity, The influence of pelvic disease on, in women, - - - - - 65
- Internal saphenous vein, Varicosities of the, a modified procedure for the radical cure of - - - - - 153
- Iritis, Relative frequency of in syphilis and rheumatism, Observation in three thousand cases, - - - - - 476
- Laboratory milk, - - - - - 68
- Laboratory milk in infant feeding, - 150
- Lachrymal sac and gland, Extirpation of the - - - - - 147
- Landry's paralysis, - - - - - 234
- Landry's paralysis—remarks of classification, - - - - - 472
- Laparotomies, A thousand and one - 154
- Lesions of the liver in young children, - 302
- Leucocytes of the blood, The estimation of the, as an aid in diagnosis. - - 303
- Liver and gall-bladder, Calculi in the, on the detection of - - - - - 307
- Liver, Lesions of the, in young children, 302
- Locomotor ataxia, A case of, beginning in the sacral cord and presenting unusual sensory symptoms, - - - 295
- Malarial fever in infancy, - - - - - 151
- Mania, Acute delirious - - - - - 62
- Measles, Diagnostic sign of - - - - - 152
- Meat diet in nephritis, - - - - - 144
- Meningitis, The common forms of - - 59
- Meningitis, Tubercular, dyspnea with - 151
- Migraine, Relation of, to epilepsy, - 62
- Milk, Bacteria in, cream as the habitat of 152
- Milk, Cow's, Gruels as diluents in - - 149
- Milk, Cow's, The inaccuracies of home modification of, - - - - - 477
- Milk, Infantile tuberculosis from - - 151
- Milk, Laboratory - - - - - 68
- Milk, Laboratory, in infant feeding, - 150
- Milk secretion, The influence of retained placenta upon the - - - - - 297
- Mitral regurgitation and pulmonary obstruction, A case of, - - - - - 478
- Modification of cow's milk, The inaccuracies of home, - - - - - 477
- Morbidity, The, of children at various ages, - - - - - 232

- Mydriatic action and value, The, of euphthalmine, - - - - - 300
 Myositis in infancy and childhood, - - - - - 478
- Narcosis, Alcohol - - - - - 155
- Nephritis, Meat diet in - - - - - 144
- Nervous system, Central, some points in the diagnosis of traumatic injuries of the - - - - - 296
- Neurasthenia, Its symptoms and treatment, - - - - - 60
- Neurosis, Reflex, from phimosis, - - - - - 293
- Nutritive enemata, The value of - - - - - 144
- Osteo-arthritis, Tubercular, - - - - - 308
- Ovarian tumor with twisted pedicle, remarks upon, - - - - - 479
- Ovaries, Colloid degeneration of the - - - - - 65
- Oxygen, The use of, in surgery, - - - - - 306
- Paralysis, Landry's - - - - - 234
- Paralysis, Landry's—remarks of classification, - - - - - 478
- Parkinson's syndrome, - - - - - 70
- Patella, Fracture of the, treatment of, by suture of its fibrous capsule, - - - - - 237
- Pedicle, Twisted, remarks upon, ovarian tumor with, - - - - - 479
- Pelvic and abdominal tumors Pregnancy complicated by - - - - - 67
- Pelvic disease, The influence of, on insanity in women, - - - - - 65
- Perforated typhoid ulcer, operation for, eighteen hours after perforation, - - - - - 479
- Peritoneal cavity, Complete exploration of the in abdominal operations, - - - - - 64
- Penis, Amputation of the - - - - - 307
- Perforating gastric ulcer, A case of; operation; recovery, - - - - - 307
- Peritoneum, A new method of treating and draining the, in diffuse peritonitis, - - - - - 238
- Peritonitis, Diffuse, A new method of treating and draining the peritoneum in - - - - - 238
- Peroneal types of progressive muscular atrophy; report of two cases, - - - - - 297
- Phimosis, Reflex neurosis from - - - - - 293
- Placenta, Retained, the influence of, upon the milk secretion, - - - - - 297
- Pregnancy complicated by abdominal and pelvic tumors, - - - - - 67
- Prostate, Hypertrophied, how to perform the Bottini operation on the - - - - - 74
- Psychiatry, The teaching of - - - - - 63
- Pulmonary obstruction, A case of mitral regurgitation and, - - - - - 478
- Pupillary reflex, Well-marked tabes dorsalis without loss of the - - - - - 231
- Radius, Fracture of the lower end of the, The cardinal pathognomonic sign of, - - - - - 479
- Railway employees, The instruction of, in first-aid, - - - - - 236
- Regurgitation, A case of mitral, and pulmonary obstruction, - - - - - 478
- Retinitis, Albuminuric, - - - - - 473
- Rheumatism, Acute articular, and chorea, The infectious character of - - - - - 235
- Rheumatism and syphilis, Relative frequency of iritis in, Observation in three thousand cases, - - - - - 476
- Rheumatism, Gonorrheal - - - - - 294
- Rickets, - - - - - 67
- Rickets, Treatment of, by supra-renal extract, - - - - - 235
- Senile cataract, The spontaneous disappearance of; report of a case, - - - - - 301
- Sensory Symptoms, A case of locomotor ataxia beginning in the sacral cord and presenting unusual - - - - - 295
- Sexual symptoms, The neglect of, in the treatment of the male genito-urinary organs, - - - - - 294
- Specific treatment of tuberculosis, - - - - - 70
- Spinal cord changes in cases of cerebral tumors, - - - - - 228
- Spinal fracture; Paraplegia, - - - - - 307
- Stomach, Latent cancer of the - - - - - 224
- Stomach, Operations on the, a brief summary of the indications for - - - - - 152
- Stomach, The digestive power of the - - - - - 305
- Surgery, The use of oxygen in - - - - - 306
- Stomach, Total extirpation of the, the complete history of a case of - - - - - 73
- Supra-renal extract, The treatment of rickets by - - - - - 235
- Syndrome, Parkinson's - - - - - 70
- Syphilis and rheumatism, Relative frequency of iritis in, Observed in three thousand cases, - - - - - 476
- Tabes dorsalis, Blindness as a result of - - - - - 148
- Tabes dorsalis, Well-marked, without loss of the pupillary reflex, - - - - - 231
- Tendon, Continuity of a, the formation of a ganglion in the - - - - - 235

Tonsillitis, Endocarditis occurring in the course of - - - - -	145
Topical treatment of tumor albus, - - - - -	480
Traumatism, Uretero-ureteral anastomosis for - - - - -	237
Tubercular osteo-arthritis, - - - - -	308
Tuberculosis in childhood, - - - - -	69
Tuberculosis, Infantile, from milk, - - - - -	151
Tuberculosis in infants, - - - - -	305
Tuberculosis, Old books as a disseminator of, - - - - -	471
Tuberculosis, Specific treatment of - - - - -	70
Tuberculous adenitis, - - - - -	69
Tumor albus, The topical treatment of, - - - - -	480
Tumor, Benign, epithelioma of the breast presenting the symptoms of a, in a woman 75 years of age, - - - - -	238
Tumors, Abdominal and pelvic, pregnancy complicated by - - - - -	67
Tumors, Cerebral, spinal cord changes in cases of - - - - -	228
Tumor, Ovarian, with twisted pedicle, remarks upon, - - - - -	479
Typhoid bacillus, Cystitis from the - - - - -	294
Typhoid fever in infants, - - - - -	150
Typhoid fever, Two kinds of erythema occurring in, - - - - -	471
Typhoid ulcer, Operation for perforated, eighteen hours after perforation, - - - - -	479
Ulceration of the esophagus mistaken for cancerous growths, - - - - -	470
Ulcer, Perforating gastric. a case of; operation; recovery, - - - - -	307
Ulcer, Perforated typhoid, Operation for eighteen hours after perforation, - - - - -	479
Umbilical hernia, The radical treatment of, - - - - -	479
Uretero-ureteral anastomosis for traumatism, - - - - -	237
Urine, Incontinence of, in children, - - - - -	151
Uterus, Pregnant, penetrating wounds of the - - - - -	298
Varicosities, A modified procedure for the radical cure of, of the internal saphenous vein, - - - - -	153
Verbal column, Chronic stiffness of the - - - - -	229
Vesical stone, Operations for - - - - -	293
Vomiting and cardiac failure in diphtheria, - - - - -	303
Wounds, Abdominal, the closure of by buried silver wire net, - - - - -	480

Wounds, Penetrating, of the pregnant uterus, - - - - -	298
--	-----

Miscellany.

Medical legislation, Proposed - - - - -	309
Medicine, Surgery, and Midwifery, An Act to regulate the practice of, and to prohibit treating the sick and afflicted without a license, and to provide penalties for the violation thereof, - - - - -	309
State Board of Health, An Act creating a, and repealing Chapter . . of the Revised Statutes of 1899, - - - - -	313

Book Reviews.

Atlas, An, of the Bacteria Pathogenic in Man, - - - - -	317
Gould's Pocket Medical Dictionary, - - - - -	317
Hemorrhoids and Other Non-Malignant Malignant Diseases; Diagnosis and Treatment, - - - - -	395
Operative Surgery, - - - - -	156
Practical Treatise on Materia Medica and Therapeutics, A - - - - -	75
Practice of Surgery, The - - - - -	397
Principles and Practice of Medicine, The - - - - -	157
Modern Treatment of Fractures, The - - - - -	158
Modern Treatment of Wounds, The - - - - -	395
Refraction and How to Refract, - - - - -	156
Treatise on Orthopedic Surgery, - - - - -	396

Notes and Items.

Antenatal injuries, Damages claimed for - - - - -	180
Appendicitis, Another danger from, - - - - -	399
Appointment of Drs. Weir and Bull, - - - - -	398
Army, Acting assistant surgeons in the, - - - - -	469
Army medical staff, An increase in the - - - - -	261
Baking powder case, The decision in the - - - - -	318
Beggs, Dr. Wm. N., - - - - -	215
Board of education sustained, - - - - -	398
Boer army surgeons, The - - - - -	308
Breach-of-promise case, An unusual - - - - -	120
Bubonic plague, The - - - - -	318

- Butler, Dr. Geo. F. - - - - 318
- Cholera and famine in India, - - - 453
- Christian science defined, - - - 365
- Colossal legacy, A - - - - 143
- Consumptives, Farms for - - - 239
- Consumptives, New York city hospital for, - - - - 417
- Crowded professions in Cuba, - - 330
- Doctors, Limiting the output of, in Russia, - - - - 223
- Emmaus Colony, The, for epileptics and feeble-minded, - - - - 78
- Epidemics, Guarding against - - 319
- Epileptics and feeble-minded, The Emmaus Colony for - - - - 78
- Famine and cholera in India, - - 453
- Fasting cure, Against the, - - - 443
- Feeble-minded, Institution for the - 175
- Hammond, Dr. William A., Death of - 43
- Heidelberg medical faculty, The - 253
- Homeopathic hospital, A - - - 318
- Homeopathic Superintendent, The, of the Fulton Insane Asylum resigns, - 223
- Honors for General Wood, - - - 15
- India, Famine and cholera in, - - 453
- Influenza in Italy, - - - - 120
- Insanity among American troops in the Phillipines, - - - - 43
- Lyddite, The explosive - - - - 143
- Lying-in Hospital, New York. Gifts to the - - - - 34
- Marine hospital for Honolulu, - - 159
- McBurney, Dr., resigns, - - - 292
- Medical Congress, A Cuban - - 129, 239
- Medical Congress, The Thirteenth International - - - - 76
- Medical practice in Italy, - - - 78
- Medical officers, More, in the United States Army, - - - - 80
- Medical prizes in Brazil, - - - 215
- Medicine, Regulation of the practice of, in Maryland, - - - - 443
- Medical Society, New York State - - 159
- Medical Society, St. Louis, Election of officers of the - - - - 58
- Medical Society. Tri-State - - - 159
- Medical study, Excursions for - - 79
- Midwives, the question of, - - - 398
- Missouri State Medical Association, - 319
- Mitchell's, Dr. S. Weir, new story, - 159
- Mutter lectureship of the college of physicians of Philadelphia, - - - 399
- Naval hospital, A new - - - - 272
- Physician, The Czar's - - - - 80
- Physicians classed as liquor dealers, - 79
- Physicians must pay taxes, - - - 319
- Physicians' services, Trustees liable for - 316
- Plague, The, in Honolulu, - - - 159
- Plague, The, reported to be in San Francisco, - - - - 211
- Prizes for original research, - - - 239
- Quack medicine in Vienna, - - - 126
- Quarantine against bovine tuberculosis, 398
- Quarantine against Cuba, - - - 399
- Quiver full, A man with a, - - - 427
- Sanitarians, conference of suggested, - 399
- Sewage, Purification of - - - - 80
- Smith, Dr. Elsworth S., the marriage of 159
- Surgeons, Acting assistant, in the army, 469
- Surgeon's labors, A lay appreciation of the - - - - 160
- Tuberculosis, Another "cure" for - - 278
- Tuberculosis, Hospital for, - - - 400
- Typhoid fever on the prison ships, - 398
- West African "Ju-Ju" man, The - - 203
- Western Ophthalmologic and Oto-Laryngologic Association, - - - 211, 318

CLINICAL REPORTS.

Accidental Wounds of the Female Bladder.—Accidental opening of the bladder has, for many years, been considered one of the most serious accidents that could occur in the course of the complicated work which genecic surgeons are often called on to perform. The following case, reported by Frederick Holme Wiggin, M.D. of New York (*Jour. Amer. Med. Ass'n.*, Sept. 9, 1899), is offered in illustration of this type of injury:

M. H., unmarried, 41 years of age, was admitted to the City Hospital, Blackwell's Island, New York, September 30, 1898, suffering from a large myoma, which sprung from the anterior uterine wall and extended above the umbilicus. On October 3rd, the abdomen was opened, and the tumor, which weighed 17 pounds, was drawn through an incision six inches in length, freed from its attachments and removed, together with the body of the uterus amputated near the internal os. As hemorrhage was profuse it became necessary to remove the mass very rapidly, to accomplish which the anterior attachment of the tumor was clamped and cut, when it was discovered, from the escape of urine, that the bladder had been opened near the fundus.

The general cavity had previously been shut off with gauze pads and thoroughly irrigated, followed by the use of hydrozone in half strength, and this, in turn, by saline solution. The gauze pads were now changed and the opening in the bladder, four inches in length, was closed by means of two layers of chromicized catgut sutures. The wound was then disinfected, and there being a large peritoneal flap, it was attached to the bladder and made to cover the line of sutures, thus making the bladder-wound extra-peritoneal. After further washing out of the abdominal cavity with hydrozone and the saline solution, the external wound was closed, without drainage, and the usual dressings applied. The patient being feeble it was not thought advisable to make a vesico-vaginal fistula to drain the bladder, but, instead, a self-retaining catheter was introduced. At the end of ten days, however,

tumefaction occurred over the lower angle of the abdominal wound, and, on opening it, urine began to escape. A vesico-vaginal fistula was now made in order to afford adequate drainage. The sinus in the abdominal wall was curetted, and after being thoroughly disinfected with hydrozone, its walls were sutured. Soon afterward, the sinus having closed, the sutures which kept open the vesico-vaginal fistula were closed, and the latter closed quickly without any further operative interference.

Percival (*Brit. Med. Jour.*, 1897. Vol. I., p. 1282) reports a case of ruptured bladder in which he had operated. It was closed by means of a double wall of Lembert silk sutures. The wound in the abdominal wall was closed, after the peritoneal cavity had been flushed out with boric acid solution, and a large quantity of clots and urinous fluids had been removed. For a few days the patient did well, and then died from peritonitis. But the necropsy proved that the bladder-wound had completely healed. It is the writer's opinion that had saline solution and hydrozone been used, instead of boric acid, and the abdominal wound been closed, leaving saline solution in the peritoneal cavity, the patient would probably have recovered.

On the Medical Treatment of Tuberculosis.—Prof. Kobert ("Official Report of the Congress for Tuberculosis," Berlin, 1899) endeavored to formulate the conclusions arrived at during recent years in the specialist treatment of this class of diseases. He based his conclusions upon his own personal experience at Görbersdorf and the replies received from over two hundred professors and prominent practitioners to a series of questions, as well as on the reports that have appeared in the medical journals. These specialists in internal diseases, surgery, pediatrics, otology, laryngology, and diseases of the lungs, have treated over 50,000 tubercular patients during the year 1898.

Prof. Kobert comes to the following conclusions:

In surgical tuberculosis, excluding infections of the lungs, iodoform acts so well that a further specific is hardly needed.

In miliary tuberculosis and hasty consumptives we can not by any method of treatment prevent a fatal termination, or even postpone its occurrence with any degree of certainty.

In most cases of laryngeal, pulmonary, and intestinal tuberculosis, medicinal treatment is required in addition to the modified Brehmer method.

The therapeutic nihilism advocated by Brehmer many years ago was rational, and perhaps even justifiable, in part, at the time; but it is not generally accepted to-day by scientific medicine. Medicinal treatment is more especially required in the advanced cases; but a rigid individualization must be employed in its use. In the opinion of more than two-thirds of all the authorities applied to, the so-called specific tubercular remedies have a certain value, although it is doubtful if their action is really a specific one in the true sense of that word. Of these remedies creosote and its derivatives enjoy the largest vogue. As great an authority as C. von Liebermeister expresses himself about it in a recent communication as follows:

"At the present time creosote is extensively employed in the treatment of phthisis of the lungs. Its efficacy has been latterly ascribed to an influence upon the various mixed infections that occur in the course of the disease, rather than to a specific action upon the tubercle bacilli; and its cautious employment is frequently followed by improvement in the appetite and the digestion.

"And since creosote is a complex mixture of many different substances, scientific pharmaco-therapeutics has busied itself with the endeavor to substitute its active principle in pure form for it. Guaiacol is generally recognized as that active principle. Both substances, creosote and guaiacol, have however such actively caustic properties that they can only be introduced into the stomach very carefully in an oily vehicle, such as cod liver oil, or greatly diluted, as with tincture of gentian; and even then it can be readily proven that they have harmed rather than benefited hundreds of tubercular patients. Many practitioners, therefore,

employ the so-called carbonate of creosote or creosotal instead of the uncombined creosote, and guaiacol carbonate or guaiacal in the place of guaiacol itself. Amongst others Privy Councillor von Heyden and Professor Cornet are earnest advocates of the method. It is claimed that it increases the appetite, lessens the expectoration, causes the bacilli to disappear, augments the body weight, and improves the patient's general condition."

Vapor Massage is rapidly increasing in favor with the medical profession as its great value in the treatment of affections of the nose, throat, middle-ear, bronchial tube, and lungs, is more widely known. Remarkably satisfactory results have been reported by many prominent observers.

Vapor massage consists in the application of nebulized vapor under pressure with more or less frequent interruptions producing a vibratory effect which acts favorably upon the circulation and other vital processes in the involved areas, just as manual massage acts upon the superficial tissues, besides applying suitable medicinal agents to the mucous membrane.

This very successful method of treatment was first introduced several years since through the invention of an instrument which is known as the Globe Multinebulizer consisting of a series of nebulizers which communicate with a central storage chambers having a specially constructed valve at its outlet, by means of which the nebulized vapor can be stored under pressure and delivered in a constant or intermittent current at any desired pressure.

Since the value of this method of treatment has been established beyond question, numerous imitations of the original instrument have appeared. As usual, they are of questionable quality, and since success or failure depends very largely upon the reliability of the apparatus used, those who wish to employ this method in their practice should be careful to select the original device (the Globe Multinebulizer), which possesses many valuable features not found in any of its imitations.

Full information can be had by writing to the Globe Manufacturing Co., Battle Creek, Michigan.

CLINICAL NOTES.

I am using the wonderful Cordial Ol. Morrhua Comp. (Hagee) more and more.—E. R. Axtell, M.D., Denver, Colo.

I think Hagee's Cordial Cod Liver Oil Comp. a wonderful remedy, and a great step in advance in the medical world.—H. O. Bates, M.D., Professor of Obstetrics, Chicago College of Medicine and Surgery, Chicago, Ill.

I have been prescribing the elegant and efficient Cordial Cod Liver Oil (Hagee) for several years and find it superior to anything of the kind on the market. My patients will have no other.—Virgil McDavitt, M.D., Quincy, Ill.

I prescribe Hagee's Cordial Cod Liver Oil constantly, in fact it is the only form in which I prescribe Cod Liver Oil. It is an invaluable preparation and will not disappoint those who use it.—A. M. Collins, A.M., M.D., Shelbyville, Ill.

The results of Hagee's Cordial Cod Liver Oil Comp. have exceeded my greatest expectations. It has no equal as a tissue builder and nerve tonic. It is a blessing to prescribe it.—J. H. Grove, M.D., 418 E. Gray St., Louisville, Ky.

I found Cord. Ol. Morrhua Comp. (Hagee) to be the remedy "par excellence" in a case of cough resulting from whooping-cough. The remedy is so palatable that patients are delighted with it. I will use no other preparation when I can get Hagee's.—J. H. Ogle, M.D., Oakshade, Ohio.

I have been prescribing Hagee's Cordial Cod Liver Oil for years with very satisfactory results in many diseases where reconstructives and nutritives are indicated, as well as Incipient Phthisis and obscure diseases; on account of its palatability patients will take it in quantities and long enough to secure results.—G. W. Buchanan, M.D., Richmond, Mo.

I want to give my testimony with regard to the use of Cordial Cod Liver Oil Comp. (Hagee) on myself. I was confined to the house with a severe attack of Influenza and had tried everything I knew of, but nothing seemed to relieve me till one night I tried your Cordial. The relief from the first dose was such that I retired to my bed and was able to sleep. I continued taking it, and am now tolerably well. I have four patients who are taking it regularly now, and with good results.—J. A. Shepstone, M.D., 4846 State St. Chicago, Ill.

CLINICAL NOTES.

Cordial Ol. Morrhuae Comp. (Hagee) is the most palatable Cod Liver Oil preparation on the market. I use it with good results.—H. A. Elliott, M.D., Barnet, Vt.

I have been using Hagee's Cord. C. L. Oil. Comp. for the past three years, and the longer I use it the better pleased I am with it.—W. A. Wright, M.D., Readfield, Mo.

My experience with Hagee's Cordial Cod Liver Oil Comp. has convinced me of its value in the after-treatment of influenza and similar conditions.—A. B. Morrill, M.D., Concord, N. H.

The combination of the agents contained in Hagee's Cordial Cod Liver Oil Comp. is admirable, and I take pleasure in prescribing it when indicated.—S. H. Duley, M.D., Morris, Minn.

Hagee's Cordial Cod Liver Oil Comp. is the finest preparation of the kind before the profession. I shall continue to prescribe it in all cases of Debility, Bronchitis, Phthisis, etc.—L. I. Bodenheimer, M.D., High Point, N. C.

Since I have been acquainted with Hagee's Cordial Cod Liver Oil I have prescribed it exclusively whenever I have had occasion to use such a remedy. I consider it the best preparation of Cod Liver Oil on the market.—Paul C. Skiff, M.D., New Haven, Conn.

Cordial Cod Liver Oil Comp. (Hagee) is not a new remedy to me, as I have been prescribing it for some time. I have found it to be superior to all other remedies in Catarrh of the stomach, for which trouble I believe it to be a specific.—T. J. Hugh, M.D., Hearne, Texas.

I feel no hesitation in placing Hagee's Cordial Ol. Morrhuae Comp. at the head of the list of Cod Liver Oil preparations. It is palatable and easily assimilated, and I can conscientiously recommend it in tubercular and neurasthenic conditions.—W. F. Sterman, M.D., Winter-set, Iowa.

I have never prescribed a medicine that has given such good results in so short a time as Hagee's Cordial Cod Liver Oil Comp. I have come to consider it a cure for Consumption, all debilitating diseases, and La Grippe in all its periods. An old lady, 74 years of age, much debilitated and emaciated, was cured of a severe cough by only two ounces of Hagee's Cordial and wanted to know why I had not given her this syrup before. A girl, 18 years of age, with inflammation of lungs and given up to die by five different doctors, was relieved by your Cordial. Your remedy has done miracles and many of my patients will take nothing else.—J. B. A. Tanguay, M.D., Providence, R. I.

CLINICAL NOTES.

Gastro-Intestinal Catarrh.—Dr. Davis, of Louisburg, N. C., reports a case of gastro-intestinal catarrh, the concomitant of mitral regurgitation, in which Maltine with Creosote proved decidedly beneficial. As he had anticipated, the Maltine showed its value as a digestive agent, and the Creosote as an intestinal antiseptic, so that the very disagreeable symptoms—nausea, diarrhea, etc., were promptly relieved.

Leucorrhea.—Dioivurnia is nearly a specific in leucorrhea. The ingredients are all good. The combination better. I used it in a case of leucorrhea of long standing and it did excellent work. I do not think it will disappoint any practitioner. (I gave it in desertspoonful doses). I recommend it and shall continue its use. As the formula is given, physicians need not be afraid to try it, for it is no secret nostrum.—A. D. Brooks, M.D., Grand Island, N. Y.

The Dosage of Orphol.—Communications upon the subject received from physicians lead us to believe that Orphol is often exhibited in quantities too small to produce the best results. Bearing in mind the innocuous nature of the drug, the rapidity of peristalsis in most cases in which it is indicated, and the amount of material to be disinfected, the remedy should be given in relatively large doses (10 to 15 grains for adults) and frequently repeated. In all instances in which the fecal discharges are unduly offensive, it should be vigorously pushed until the stools are completely deodorized.—Schering & Glatz, 58 Maiden Lane, New York.

A girl, 16 years of age, was brought to me by her mother, who asked me to examine her daughter's face. I found the girl's upper lip very much swollen and covered with a moist eczema, which spread over each cheek; this condition, I was told, existed for over a year and had resisted all treatments. I prescribed:

R. Liquor pot. arsenitis.....5.00 c.c.
Pepsinæ puræ.....0.50 grms.
Vini antimoni.....5.00 c.c.
Elix. tr. ferri chloridi peptonatis.....50.00.

M. Et. Sig. Teaapoonful every six hours.

Externally, I ordered the affected parts thoroughly soaped and washed with hot water as hot as could be borne, using Dermapurine Soap. After the soap having been thoroughly washed off, I ordered liquid Dermapurine to be applied, at first diluted with equal parts of water and gradually increased to full strength; the patient's face improved rapidly and got well.—J. J. Link, M.D.

CLINICAL NOTES.

Nature's Needs.—A brief consideration of what may be termed the physiology of disease will throw much light on the subject of the needs of Nature in the period following the subsidence of the symptoms.

Symptoms may be said to be intensified physiological functions accentuated to such an extent as to constitute abnormalities. This is true of fever, pain and the whole host of symptoms ascribable to special organs and tissues. Emaciation and nervous exhaustion ensue because the processes of disease, requiring as they do fuel for increased oxidation, deplete the patient of nervous force and tissue structure. Nature's method of repairing waste—by food—is prevented, because the digestive organs share in the general enfeeblement consequent upon disease. The patient has neither the inclination to eat or the physical powers necessary to digest and assimilate food.

It is in just this class of cases that the restorative effects of Gray's Glycerine Tonic Comp. are most pronounced. Because of its alterative, tonic action upon the gastric mucous membrane, it takes hold of dormant, torpid nutritive functions and stimulates them to normal physiologic activity. Appetite is engendered, atonicity of the digestive functions is abolished, and the patient is able to eat, digest and assimilate a sufficient amount of food to replace waste of tissue, impoverishment of blood and depletion of nervous force. It thus duplicates and reinforces Nature's recuperative powers; hence the value of Gray's Glycerine Tonic Comp. in convalescence from la grippe, typhoid fever, malaria, pneumonia, etc. It can always be relied upon to effect the desired results in all forms of anemia.—(The Purdue Frederick Co., 15 Murray Street, New York.

Waterbury's Cod Liver Oil with Creosote and Guaiacol is all that is claimed for it, which has been clinically verified in my practice.—J. W. Cokenower, M.D., Secretary of the Iowa State Medical Society; Lecturer on Orthopedic Surgery, College of Physicians and Surgeons; Attending Physician to the Mercy Hospital; Consulting Physician to the Cottage Hospital

Dysmenorrhea.—I have tried Dioiburnia in several obstinate cases of dysmenorrhea and it acted like a charm. I have since used it a great deal and find it satisfactory in all cases.—I. F. Huff, M.D., Schneeksville, Pa.

Hagee's Cordial Ol. Morrhue Comp. is the best preparation of the kind on the market. I have used it in Phthisis with splendid results.—C. T. J. Giles, M.D., Piedmont, S. C.

According to Prof. Von Nencki, Betanaphthol-Bismuth agrees with patients well, even when its use is long continued.—*Wratsch*, '93, No. 1.

